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Computer Weekly
Thursday, July 7, 1983

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"If users want advice they naturally ring a national body. But they're not always aware that when they talk to an NCC regional officer they're also talking to an NCC salesman."

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He suggested any conflict could be removed by the government. "The government's emphasis is on self-funding — so the NCC has to be commercial," he said. "But if the government wants a centre of excellence perhaps it should be prepared to pay for it."

NCC director David Fairbairn also pointed to the close contact with the CSA. He said the NCC did not compete unfairly: it charged market rates. The NCC put up half the funds for its projects, so its profits were used in the national interest, he said.

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Apple's million

APPLE Computer has joine[illegible] million club. Its millionth ma[illegible] rolled off the lines in Carro[illegible] Texas at the end of last mo[illegible] and headed to a California sc[illegible] It will be the first of 9,000 A[illegible] that will be given away [illegible] Apple's Kids programme, [illegible] aims to give an Apple IIe to [illegible] school in the state this summ[illegible]

BTG gives

A LONDON based co[illegible] communications compa[illegible] £300,000 better off this we[illegible] lowing a decision by the [illegible] Technology Group (BTG) [illegible] vide it with a financing p[illegible] The money will enable th[illegible] pany, C Squared Co[illegible] Limited, to proceed with [illegible] velopment of an Apple c[illegible] nications package.

BA staff face a[illegible]

A FIFTH of British Airwa[illegible] staff face redundancy this w[illegible] the airline readies to cut nu[illegible] by 2,500 before privati[illegible] Monday saw 70 senior ma[illegible] leave, including long-tim[illegible] manager Peter Hermon, [illegible] European division head, a[illegible] top management was put in [illegible] Further redundancies are ill[illegible] affect programmers.

Queen's man accuses the government

by George Black

GOVERNMENT has been accused of breaking international rules by favouring ICL in a major university contract to be placed this week.

The row threatens to re-open the wounds of foreign manufacturers who were furious at ICL getting the £40 million PAYE job in November 1980. ICL was awarded the mainframe contract with the Inland Revenue two months before Common Market rules came in demanding open competition.

Now the professor of medical statistics at Queen's University, Belfast, Tony Greenfield, has accused ICL of "colluding" with government officials to secure a deal which will replace its 10-year-old ICL 1900s. He said the university had wanted to buy a Honeywell DPS 8/70 system using Multics software, but the Treasury's central computer and telecommunications agency had "colluded" with ICL to make it take an Estriel machine.

Greenfield has written a letter of complaint to Chancellor of the Exchequer Nigel Lawson. And he is urging university vice-chancellor Peter Froggart not to sign the ICL contract.

ICL expects to get a copy of his letter to Lawson and its lawyers will be looking closely at it. A spokesman said: "Rest assured it won't be allowed to lie."

Lawson is said to have passed the letter to Barney Hayhoe, Treasury minister for the CCTA, for decision.

Greenfield said: "We dropped ICL from our shortlist, but the universities' computer board told us to put it back. The CCTA told us to substitute 'should' support 150 terminals for 'must' support them."

That number had been stipulated as the minimum need, rising to 400 in 2½ years, he said. After detailed study a working group proposed Honeywell, but the choice was overturned, he alleged.

ICL says no decision has yet been reached, but one is imminent. "They want us to take an Estriel which is being built in Japan by Fujitsu and is promised for 1986," said Greenfield.

■ Leader Comment — page 13.

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Datapoint and Matra have shares in a company called Matra Informatique.

Datapoint will merely confirm the existence of the jointly owned subsidiary but informed sources say that Datapoint is anxious to get a foothold in the European banking business, especially in France.

Apple's million

APPLE Computer has joined the million club. Its millionth machine rolled off the lines in Carrollton, Texas at the end of last month — and headed to a California school. It will be the first of 9,000 Apples that will be given away under Apple's Kids programme, which aims to give an Apple IIe to every school in the state this summer.

BTG gives

A LONDON based computer communications company is £300,000 better off this week following a decision by the British Technology Group (BTG) to provide it with a financing package. The money will enable the company, C Squared Company Limited, to proceed with the development of an Apple communications package.

BA staff face axe

A FIFTH of British Airways DP staff face redundancy this week as the airline readies to cut numbers by 2,500 before privatisation. Monday saw 70 senior managers leave, including long-time DP manager Peter Hermon, lately European division head, as new top management was put in place. Further redundancies are likely to affect programmers.

Queen's man accuses the government

by George Black

GOVERNMENT has been accused of breaking international rules by favouring ICL in a major university contract to be placed this week.

The row threatens to re-open the wounds of foreign manufacturers who were furious at ICL getting the £40 million PAYE job in November 1980. ICL was awarded the mainframe contract with the Inland Revenue two months before Common Market rules came in demanding open competition.

Now the professor of medical statistics at Queen's University, Belfast, Tony Greenfield, has accused ICL of "colluding" with government officials to secure a deal which will replace its 10-year-old ICL 1900s. He said the university had wanted to buy a Honeywell DPS 8/70 system using Multics software, but the Treasury's central computer and telecommunications agency had "colluded" with ICL to make it take an Estriel machine.

Greenfield has written a letter of complaint to Chancellor of the Exchequer Nigel Lawson. And he is urging university vice-chancellor Peter Froggatt not to sign the ICL contract.

ICL expects to get a copy of his letter to Lawson and its lawyers will be looking closely at it. A spokesman said: "Rest assured it won't be allowed to lie."

Lawson is said to have passed the letter to Barney Hayhoe, Treasury minister for the CCTA, for decision.

Greenfield said: "We dropped ICL from our shortlist, but the universities' computer board told us to put it back. The CCTA told us to substitute 'should' support 150 terminals for 'must' support them."

That number had been stipulated as the minimum need, rising to 400 in 2½ years, he said. After detailed study a working group proposed Honeywell, but the choice was overturned, he alleged.

ICL says no decision has yet been reached, but one is imminent. "They want us to take an Estriel which is being built in Japan by Fujitsu and is promised for 1986," said Greenfield.

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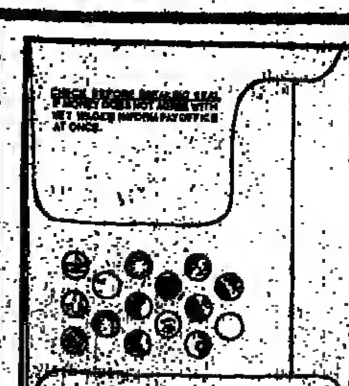
Kobayashi meets Mrs Thatcher 3



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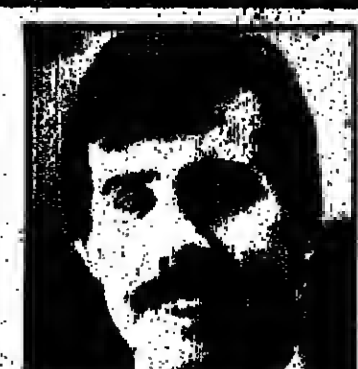

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Investors want university skills

TAYLOR . . . "Interest matches our objectives."

by John Kavanagh

A NEW call for university research to be brought to the market has come from the big investment firm, Finance for Industry, which has been restructured and renamed Investors in Industry.

"There is growing interest in the creation of new businesses around university expertise — and this matches our own objectives ideally," said Geoff Taylor, director of the ventures division.

Universities should not be purely academic centres, he added. They had a key role to play in industry.

Three of the 10 start-up firms backed by Investors in Industry last year were born in universities. "We expect to see more activity of this kind," anticipated director Taylor.

The computer industry is particularly rich in start-up ventures.

Over half the 26 firms backed by Taylor's division are in computing, electronics, robotics or telecommunications.

But supporting start-up firms brought the problem of finding the right management mixture, Taylor said, and that was now his most challenging task.

New companies needed the person with the idea plus good management and marketing people. Part of Investors in Industry's service involved helping to find such people.

Taylor's comments on universities comes as the National Computing Centre is seeking government funds to help get university software to market through services companies.

Information Technology Minister Kenneth Baker is believed to be proposing backing for close ties between Britain's universities and industry.

Investors in Industry was formed because of a change of direction in Finance for Industry's investment methods and a growing overlap of the activities of its various subsidiaries, according to chairman Lord Caldecote.

Instead of waiting for approaches from inventors the company now went looking for good prospects.

"Innovations in fund raising" included tapping overseas money markets.

The extra funds have enabled the company to finance big firms as well as start-ups.

Last year Investors in Industry put £92.7 million into 772 companies.

Investors in Industry is backed by the major UK banks.

Computer firms it has backed include terminal suppliers Cifer Systems and Pericom Data Systems, maintenance company DPCB and communications equipment firms TechNel Data Products and Fenwood Designs.

■ Leader Comment — page 13.

DP firms give EEC plan a miss

by John Riley

ONLY one computer profe[ssional] is included among th[e] Europeans chosen last week b[y the] EEC to take part in a £1 m[illion] programme aimed to beat the [Ja]panese by studying their meth[ods].

The executive training p[ro]gramme is paying all the expe[nses] of sending 30 young Europ[ean] executives away from their [com]panies to Japan for an inten[sive] 18-month language and bus[iness] training course.

The scheme is designed to p[ro]vide companies with access [to] the business and official life [of Ja]pan.

The successful company i[s a] French computer-aided de[sign] company, Benson, which wi[ll be] sending an executive to Japa[n this] autumn. Executives from [...] British companies will als[o be] going, but none of these are [in] the computer industry.

A question mark hangs ove[r the] poor showing of computer c[om]panies in the scheme, especi[ally as] the European Commission ha[s re]cently voiced a high le[vel of] concern about the influx of [Japa]nese information technology [pro]ducts into the community.

Management consultant [...] Marwick & Mitchell, respon[sible] for publicity and for drawing [up] the UK shortlist, claimed that [de]tails of the scheme were circula[ted].

A spokesman commented [that] there were "one or two applic[ants] from the UK computer indu[stry] but that the most promisin[g had] been from a subsidiary of a [...] based company, which m[...] told against it."

Janet Watford, of the [...] division of the External Rela[tions] Directorate in Brussels, said [that] there was a need for more p[ubl]ity, and that the 203 applica[tions] Europe-wide were "very low". [She] attributed the low number of [ap]plications to "the continued [reluc]tance to tackle the Japanese [mar]ket by EEC companies".

One problem with the sch[eme] which is run on an annual ba[sis] that the scheduling of the co[mmis]sion budget gives companie[s] little time to prepare their ap[plica]tions.

The budget for next year's [pro]gramme will only be approv[ed in] December, and applications [for] the 1984-85 scheme have to b[e in] by mid-February, which [gives] little time for companies to [select] candidates and organise.

Star revives the apprentice days

by Philip Hunter

FIVE trainees have been taken on by a London computer maker under a local government initiative to revive the dying tradition of apprenticeships for modern trades like information technology.

The hope is that a better chance for permanent jobs will follow after the year's training is over.

Star Computers is giving the five trainees, aged 19 to 23, a year's apprenticeship in hardware engineering with on-the-job training complementing day release courses given by the sponsor of the scheme, Hackney Borough Council.

Each apprenticeship will be paid £3,200 for the year, £2,400 coming from the council, with Star making up the difference.

Star's director of engineering, Barry DeLoble, said that the five had done so well since they started work in April that they would get a pay rise in October at the company's expense.

"We will take on at least three of the five at the end of the year," DeLoble added. "They all stand a good chance of getting a full-time job."

Following the success of the scheme, DeLoble said that the company would almost certainly take on five more trainees next year.

The experience gained by Star has made the five, four of whom were previously unemployed, eligible for higher technology courses, which will strengthen their career prospects.

Sue Wardell, training manager at Hackney council, said that two more computer companies in the borough were considering joining the scheme. "We have written to every firm in Hackney — 24 altogether — dealing with IT," she said.

Lambeth and Wandsworth councils have started their own apprenticeship schemes, which threaten to destroy the belief that small high technology companies never take on trainees. The schemes are in part funded by the government under the Urban Programme which local councils can bid for.

Lords read privacy changes

by our Parliamentary Correspondent

LAST week it was the turn of the House of Lords to make the running on computer issues, with the second reading of the reintroduced Data Protection Bill.

Lord Elton, Under Secretary of State at the Home Office, explained changes from the original drafting of the Bill before the election, including a tightening up of the wording.

But the most fundamental change was to Clause 7, which previously required applicants for registration of data to wait for up to two months for notification from the registrar before they could begin the new operation.

Many organisations, including small computer companies, had complained that this delay could greatly hinder their progress. Lord Elton said that the government had now decided to revise the clause so that, in the best traditions of British law, applications would be deemed registered unless found otherwise.

Applicants would therefore be able to get on with the new operation while their case for registration was being considered.

Lord Elton said that all personal data held for payroll and accounting would still be exempt, as would public registers required of firms under the Companies Acts.

Lord Elwyn Jones for the opposition said that he still could not guarantee the Bill an easy passage. There were still serious omissions and, although the Bill was now less oppressive, it still fell far short of what had been recommended by the Lindop Committee.

The main Lindop proposals was for the creation of a data protection authority with power to conduct spot checks to ensure that personal files were accurate and secure from illegal access.

The Bill makes no provision for a data protection committee, and all responsibility lies with the registrar. Lord Elwyn Jones thought that the registrar's duties had not been clearly enough defined.

Meanwhile, the Commons heard that Essex police will this month begin trials of a computer system called Mirian to help with investigation of major crimes.

Douglas Hurd, Minister of State at the Home Office, also said that an examination of how police could best transfer data from local microcomputers to a larger machine when more powerful processing was required was almost complete.

Almost half the primary schools and virtually all secondary schools now have a micro, John Butcher, Under Secretary of State for Trade and Industry, told the Commons. A further scheme for secondary schools would begin later this month.

Peter Morrison, Under Secretary of State for Employment, announced in the Commons that a computer system to provide information about jobs from all over the country would be installed at the end of this year at Job Centres.

The system would allow Job Centres to have access to vacancies at other centres via the existing national computer.

Hoskyns brings commerce to market

by Philip Hunter

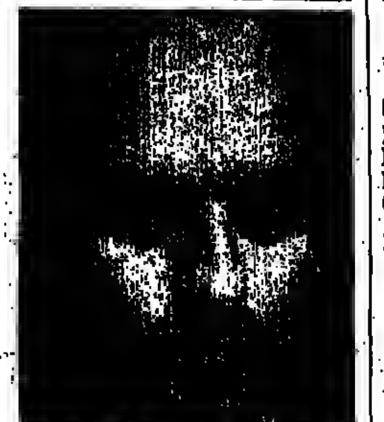
HOSKYNS has brought the first of a new range of commercial applications software to market with a financial control package for IBM mainframes.

The company aims to cover a wider range of the market than before, offering users cheaper entry level products which can later be upgraded.

The financial package costs about £50,000 and runs under DOS/VSE, MVS, CICS, VSAM and DL/1. But the price will come down for the next version of the software for the IBM 4300 range under SSX and IMS.

The software is written in a version of Cobol that is machine independent, and the company says that versions for ICL, the Hewlett-Packard 3000 mini and the Digital Equipment Vax will follow this year.

There will also be more software in the autumn, including existing management control programs revamped to fit into the new style of operation in which portability and security are paramount. There will also be a flexible report writer announced in July.



WINSLADE . . . "Independent software."

"The software is completely independent of the operating system," says Tony Winslade, marketing director of the new programs, known collectively as MAS, Modular Application Software. "You can move from a DOS VSAM environment to a conventional OS, DOI, or even to ICL VME."

Hawker-Siddeley and CMI poised to agree

by Howard Karten

HAWKER-Siddeley Dynamics Engineering Ltd, a Hawker-Siddeley subsidiary, and California's Computer Memories Inc (CMI) last week formed a joint venture which will manufacture CMI's 5.25-inch Winchester disc drives for the European Economic Community.

The agreement, which must be approved by the Hawker-Siddeley board before it becomes official, will draw on CMI engineering talent and Hawker-Siddeley funding in an amount that has yet to be determined.

The products to be manufactured will initially be three CMI Winchester drives in the company's CM5000 family — a five-, a 10, and a 15-megabyte Winchester (sealed) drive.

Reports circulating in the US predict that manufacturing [will] commence by October, [pro]bably at an existing Hawker-Sidd[eley fa]cility in the UK. CMI's Euro[pean] marketing manager, Philip [...]well, is believed to be a lead[ing] contender for the post of ma[naging] director of the new venture.

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NEC makes a personal advance

by Kevin Cahill

NEC CORPORATION launched its Advanced Personal Micro in the UK last week, hot on the heels of opening a new semiconductor factory in Scotland and of talks with the Prime Minister aimed at further investment by the company in the UK.

The plant in Livingston, which represents a total investment of around £25 million, will eventually employ 600 people and will initially manufacture 64 Kbyte Dynamic RAM chips and four- and eight-bit microprocessors.

There are plans in hand to build NEC's advanced 256 Kbyte DRAM in Scotland, as well as the 8086 microprocessor which is used in the Advanced Personal Micro.

Company officials declined to put a date on the move to advanced production of the next generation of memory chips, but a date widely suggested is the latter half of next year, when NEC will have had nine months' experience of handling volume production of the chip from Japan.

The price of 64 Kbyte DRAMs has risen sharply recently, along with an extension of lead times for deliveries of 30 to 40 weeks.

The prospect of further NEC investment in the UK has risen following the Queen's opening of the factory, and contacts between the chairman of NEC, Dr Koji Kobayashi, and the Prime Minister.

Dr Kobayashi said that he would shortly be making a report to Mrs Thatcher, but declined to reveal its contents.

Despite the focus on the Scottish factory, the principal object of Dr Kobayashi's stay was to launch the company's Advanced Personal micro, a 16-bit IBM-compatible personal computer.

Its launch follows the unsuccessful attempt to use a UK distributor to handle the NEC small personal micro, the PC 8000.

The machine is priced roughly £1,000 below the IBM PC and comes fully configured with 12in. black and white monitor, 128byte RAM, one Mbyte floppy disc and keyboard for £1,985.

Software will be supplied by a UK and US systems house.

KOBAYASHI . . . Will shortly report to Mrs Thatcher.

The Navy gives £5m to DEC

by Nuala Moran

THE Royal Navy has placed an order worth £5 million with Digital Equipment Company. The order is for 66 PDP-11 systems to run the Navy's Oasis (on board automatic data processing support in ships) software.

Oasis is designed to cope with three applications: stores stock control, technical management and general ship administration. It was developed by the Royal Navy at Portsmouth and was successfully tested in land and sea trials over the past two years on four pilot systems.

PDP-11/24s will be installed on frigates and PDP-11/44s on larger ships and aircraft carriers. Delivery of the systems will extend over three years, as ships and submarines return for periodic refits. Eventually every vessel in the Navy may carry an Oasis system.

Hitachi counters IBM's spy charges

by Howard Karten

HITACHI is countersuing IBM to prove it did not obtain confidential computer secrets by illegal means.

The Japanese mainframe manufacturer has filed a suit at Tokyo district court for damages against IBM, which made the allegations in a civil action in San Francisco last September.

Hitachi is out to show that it does not have to pay any compensation to IBM, which named five companies and 16 individuals in its spying charge. Hitachi will argue that any information it had from IBM was not of strategic value and that it had not broken Japanese law.

It has brought the case in Tokyo because it says all the IBM documents referred to were obtained in Japan.

The San Francisco district court has meanwhile dismissed charges against two Hitachi staff who were accused of conspiring to transport IBM secret documents to Japan. Nine other Hitachi defendants who are in Japan may not have to face US courts. The US Justice Department has to decide whether to press for extradition.

In another IBM action against Mitsubishi and four of its employees, defence pleas that the cases should be quashed have been turned down by a federal judge. The defence argued that the evidence against them had itself been gained by illegal means, but that was rejected. Further arguments will be presented by defence lawyers to try to get the cases dropped.

The US Congress's commerce committee is currently investigating alleged industrial espionage practices against American companies.

Defence lawyers have said there was "outrageous government misconduct" in the bringing of the charges against Mitsubishi and its men.

In the spring, Justice Department officials agreed that the charges against the two Hitachi men should be abandoned provided they kept clean records until now.

Hearing averted

AN OUT-OF-COURT settlement has pre-empted an industrial relations hearing on the dismissal of BCS technical assistant secretary Hannan Rose. Rose would not give details of the settlement, saying that part of the agreement was that he would maintain silence.

Rose was dismissed by BCS secretary general Derek Harding in February, on the grounds of redundancy, but Rose has always maintained that he was sacked due to a clash of personalities between himself and Harding.

ROSE . . . No details.

ANALYSTS/PROGRAMMERS

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Plessey doubles IDX sales

by Donald Kennett
SALES of Plessey's IDX digital private telephone exchange have doubled, despite the company's dispute with its former US partner Rolm. Orders since the system was launched in January are running at double last year's level, when the company was selling its predecessor, the PDX, under licence from Rolm.

Customers including Grand Metropolitan Hotels, Leicester Building Society, Yorkshire Electricity Board and London Fire Brigade have ordered 119 systems with a total of 49,000 lines. Another 33 systems with 16,500 lines are on order subject to confirmation.

The IDX is claimed to be the UK's first third generation PABX – which can handle the traffic patterns of both voice and data connections in a single switching matrix – and it is sold in the UK by three companies, Telephone Rentals, British Telecom Merlin and Plessey.

Plessey has taken the lion's share of 62 of the orders, followed by TR's 44 and BT Merlin's 11. It has also taken two export orders.

Plessey dominates the UK PABX market. It had a 39% share last year, up from 29% in 1981, and aims to win 50% this year. Its export plans are to tackle the Middle East market from the end of this year, Europe from next year and the Far East from the end of next year.

On the public exchange side, the company and its export partner, GEC, have just lost the £7 million contract to supply digital network systems to Guang Dong province in China. The contract was won by Sweden's LM Ericsson. GEC and Plessey took over the UK bid to sell System X to China after STC, which had been leading it, pulled out of the partnership late last year.

Meanwhile, ITT has won a contract in Norway to install 200 of its System 12 digital exchanges in the public network between 1985 and 1988. It beat bids from LM Ericsson, France's CIT Alcatel, Canada's Northern Telecom and Japan's Nippon Electric.

PARRY (left) and ASHLEY MITCHELL . . . Offered 30% of company by public tender.

United's share issue flops

by John Kavanagh
UNITED Leasing's share issue has flopped. Only half the four million shares on offer from the IBM specialist leasing firm were taken up by investors by the start of trading on Monday. But the company will still get the full £4.5 million it was seeking, because sponsor Barclays Merchant Bank and a group of sub-underwriters will pay the difference.

United Leasing's founders, Ashley and Parry Mitchell, were offering 30% of the company at £1.40 a share by public tender. This means potential investors have to apply to buy shares at the asking price or make a higher offer.

Cobol specialist Micro Focus had a highly successful placing by this method in May: the asking price was £1.55, but demand was so great that trading started at £2.40. Micro Focus shares are now around £4.

Tessa Banford at Barclays, who dealt with United's placing, said the shares had not been taken up because the stock market was very weak and investors were able to pick and choose from the many companies coming on the market.

United's row with its former adviser, merchant bank Hill Samuel, had not helped, Banford said. The two had failed to agree on the treatment of the accounts. And she added: "Leasing and computing separately are complicated businesses and if you put them together you get a very complex company for people to understand."

She said United was an "extremely good" company which would, in time, be a Stock Exchange success.

This was the second disappointment in a month for Parry Mitchell. On June 9 he failed to be elected to the Commons as an SDP-Liberal candidate.

NCR sponsors Olympics team

NCR can use official Olympic logo.

by John Riley
NCR LAST week became the UK computer industry's official sponsor to the British Olympic team in a deal that benefits the athletes, NCR and NCR's microcomputer dealers and software suppliers.

A total of 20 companies, each from a different sector of industry, will eventually be signed up with the British Olympic Association. The value of the NCR contract was not disclosed, but Charles Palmer, vice chairman of the association, said: "There is no upper limit, but companies have to offer at least £10,000. We want to gain a total of £750,000 nett, and as the government charges us corporation tax of 40% on contributions from industry, we need about £1.5 million."

NCR will get the use of the Olympic symbol, the title of official sponsor, preferential booking of seats, and co-operation in the individual promotion of Olympic personalities. "It will help the 'I'm backing Britain' image," said former British Universities decathlon champion Mike Couzens, whose brainchild it was.

Couzens, who has head hunted recently from Wang, is director of NCR's newly formed Independent Marketing Division, set up to sell NCR's microcomputer products. He has high expectations – "you've got to sell 10,000 micros in the first year or you're not in the business" – and is currently recruiting 80 dealers with the aid of Lyn Mallet, brought in from Commodore Business Machines.

Californian firm makes three deals

A CALIFORNIA OEM company last week won $76 million in three separate two-year contracts.

Convergent Technologies of Santa Clara, in California's Silicon Valley, signed a two-year $31 million contract to supply executive workstations and terminals to Computer Consoles of Rochester, New York. In addition Convergent signed a two-year contract with Automatic Data Processing of New Jersey, worth approximately $40 million, and a similar contract worth $2 million with Rolm-Corp of California, a maker of computerised telephone equipment.

Convergent makes a multi-user small business computer called the Megaframe, which is built around a Motorola 68000 microprocessor and an Intel Corp 186 processor.

In addition, Convergent has under development a workstation expected to be introduced in late autumn. It is this workstation, reportedly a highly powerful, flexible unit, which is being sold to the three other firms.

Associates profits leap 85% to $5m

by George Black
NEW YORK software house Computer Associates has reported profits 85% higher at over $5 million and annual income 35% higher at $58 million.

The news come only days after its mammoth offer of 2.75 million shares on the US stock exchange. The offer, which was more than 100% oversubscribed, brought in around $80 million for working capital and acquisitions.

First of these was Information Unlimited Software of Sausalito, California, a micro software firm whose most successful product is the Easywriter word processing program on the IBM PC, DEC Rainbow and Apple machines.

This purchase consolidates Computer Associates' position for attacking the systems, database and applications markets in competition with the giants of the software business.

Computer Associates' progress has been steady but unobtrusive since its foundation as a Swiss consultancy in the early 1970s. Its CA-Share product was a big hit for the Wang brothers, Charles and Anthony, who ran the US agency. Computer Associates, and then bought out the licensor. In 1981 they grew further by taking on CPP Products from the CAP group.

Last August they took over the IBM operating systems specialist Capex of Phoenix, Arizona.

Other acquisitions have broadened the company's range, including those of David Tory's British firm Carus, previously Pansophic and Johnson agents, and Stuart Orr, which has provided the base for a new line of packages.

Orr's programs are C-based and designed for minicomputers, but have been reshaped for IBM mainframes to fit Associates' existing customers' installations.

■ Wall Street Transcript Corporation named Charles Wang the outstanding chief executive officer in the software industry for the past year, with John Cullinane runner-up and Sandy Kurtzig of ASK third.

SALES BRIEF

Bull pulls off multi-million Nigerian deal

FRENCH state-owned computer company Bull has pulled off a major contract in Nigeria. The Federal Interior Ministry has ordered a large number of minis and terminals worth several million pounds for distributed administration, including the processing of compulsory identity cards.

The order includes 24 Mini 6 systems, derivatives of Honeywell's Level 6 minis, developed when the company was still half-owned by the US company, and 452 Questar/T terminals.

Firm consults

A SMALL Peterborough company has been appointed national training consultant for the British Institute of Management. Polebrook Management Systems will deliver two-day courses, including VisiCalc and Prophet Plan Training, with the emphasis being on cutting out the jargon.

Library contract

THE Department of Health and Social Security has picked BNF Metals Technology Centre to computerise its main libraries with Prime hardware and the Status retrieval package developed at Harwell AERE. BNF will handle all the installation problems and train the staff.

Education first

PRIME Computer has taken its first order under its recently announced £4 million programme of support for education. A 2250 minicomputer has been ordered at cut-price by the Institute of Psychiatry for training and research by postgraduate students.

BL places order

LANCASHIRE builder of dedicated hardware Microface has landed £56,000 worth of business from British Leyland. The deal is part of a £200,000 contract for a computer-controlled testing rig, with H.B. Instrumentation supplying the instruments, and Microface the computer and software.

Nixdorf for Scots

WEST Germany's leading computer maker, Nixdorf, has increased its solid Scottish base of customers with an order from the colour stationery printer, Inglis Paul. The order is for a Nixdorf 8870 system for accounting and administration.

Swiss Dow buys

IBM PLUG-compatible maker National Advanced Systems has installed an AS/9040 at the Swiss headquarters of Dow Chemical Europe.

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Software vendors face piracy charges

by George Black
THE first lawsuits against software rental firms for alleged piracy are taking place simultaneously in the US and Japan.

MicroPro, owner of the popular WordStar wordprocessing program, has filed a suit in San Francisco charging United Computer Corporation of Culver City, California, with copyright infringement.

And eight Tokyo firms have filed a suit to seek an injunction stopping the rental operations of Sofmap

Both could prove to be test cases for the industry. MicroPro's UK director, David Butcher, said the action could be repeated in this country if necessary. It was not feasible to prevent piracy by technical means at present, he claimed, so the only defence was to go to law.

MicroPro's counsel, Ric Giardina, will argue that United is renting its programs so that customers can illegally copy them. He claims that United vice-president George Pollack wrote in articles published in the US that it was probable customers would copy them.

The defendants will be United president Gerald Stone, with company principals George, Robert and Norma Pollack. Damages of $1 million are sought from each defendant, as well as $10 million from the company and $50,000 for each act of alleged infringement.

The suit claims that the software is being repackaged without the licence agreement and rented for seven to 10 days at a quarter of the actual retail price or less.

In Tokyo district court in May Enix filed a suit seeking an injunction against Sofmap, a chain of three software rental shops in Tokyo and Osaka.

Now the action begun by Enix president Yasuhiro Fukushima is being supported by seven other litigants who also allege copyright infringement.

BUTCHER . . . MicroPro's action could be repeated in the UK.

Osborne dallies over going public

by Kevin Cahill
THE public flotation of Osborne Computers in the US is now drifting into the middle distance next year or even the year after.

The company has recently acknowledged "cash flow" problems and changed its management, but is still not recovered from a dramatic slowdown in shipments of products from 27,000 in January to just 2,000 last month.

Adam Osborne, the ex-journalist who founded the company and who was in the UK for the launch of his new product, the Executive, refused to comment on the shipment figures.

He said that to do so would be giving away secrets to the competition.

Osborne also refused to explain what had caused the problems at the company, which recently led to an emergency $30 million bank-based finance package.

The drop in shipments, which has been progressive since January, would account for a drying up of cash, as the company was still increasing staff when the slide started.

The failure to go public with its shares as planned in March would also account for a cash shortage, according to US-based stockbrokers.

Osborne's intended broker, Rothschild Unterberg Towbin, is remaining as tight-lipped as Osborne about why the issue was called off.

Although the Osborne was rated the most popular selling portable computer over the past four weeks in the US, the company is facing increasing competition from all sides.

The Hyperion is leading the attack on the Osborne niche, but not far behind are Gavilan and Grid, both offering smaller and lighter machines than Osborne.

The Japanese, including market leader NEC and Sord Computers, have each introduced small, portable devices, which sell for considerably less than a fully operational Osborne with software.

A tentative plan by Osborne to open a factory in Ireland has now been shelved indefinitely.

■ The trendsetter who isn't afraid to follow others – see page 12 for Robert Parry's profile of Adam Osborne.

Zynar cuts back price of network system

by Donald Kennett
ZYNAR has lowered dramatically the entry-level cost of its system for networking IBM Personal Computers by launching a version that needs no central file server.

Plan 4000, the version launched in January to network IBM PCs and Apples, depends for its operation on a file server based on a 16-bit Motorola 6800 processor with up to 548 Mbytes of hard disc storage. The price of the server starts at around £20,000 and it only becomes economical with upwards of 16 workstations on it.

Plan 2000, the version launched last week, uses software that runs in background mode under MSDOS on the IBM PC and it becomes economical with the starter kit costing £1,500, which enables two workstations to be linked together to share a hard disc or a printer.

Product marketing manager Matthew Fowler said: "We've minimised our component so we can get into a lot of volume."

The starter kit consists of an interface for each of the workstations, two floppy discs with the software to run in them, a junction box to extend the network in future and the coaxial cable to join them all up.

"This year we think sales will be held up by the availability of IBM's XT," said Fowler. "Next year we hope to be selling this product in thousands."

The XT version of the IBM PC, with its inbuilt hard disc, is thought to be very attractive to large companies, which are expected to buy it in bulk as standard office equipment like the typewriter when it is launched later this year.

Zynar believes these companies will soon want to link their PCs in small clusters and later that they will want to tie them all together via wide area mainframe networks.

"The real hot button is that people want SNA on local clusters," said Fowler, "but SNA is still a moving target. We think that strategically IBM wants to keep those customers locked in."

ANALYSTS/PROGRAMMERS

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Paradyne plans to profit in Europe

by Donald Kennett

US DATA communications company Paradyne has big plans for expansion into Europe.

European vice-president David Crofts said: "At present we dn only 10% of our business outside the US. We intend that to be 40% as soon as possible."

The company has been trading in Europe over the last five years thrnugh Ericssnn and CASE. Ericson has won significant nrders in West Germony with Paradyne modems, particularly on international circuits where it bas been able tn sell the Paradyne 16Kbit-per-second modem directly tn private companies that were previously using 9.6Kbps modems. The German Bundespost msintains a monopoly on the supply nf mndems for inland use.

The relationship with CASE is a partnership in which CASE builds Paradyne circuit boards into its own equipment and Paradyne manufactures CASE's DCX switching multiplexers under licence in the US.

Last week the European divisinn took extra space for its head office in Windsor and by the end of the year it plans to opeo an additional office.

"The new facility will be for snftware not hardware," said Crofts. "The real added value is much more in software and services than in manufacturing and as time goes on it becomes much less important to have manufacturing than development." The company plans tn start manufacturing in Europe in the next 12 to 18 mnnths.

Meanwhile, the company wants to espand through direct sales to users, as well as hy signing up more OEM eustnmers, distributors and partners in joint vennures. Most of its 41 distributnrs are in the US, but 12 are in Europe. Some are substantial manufacturers in their nwn right, for example Elbit in Israel.

"We have set up direct sales operations in the UK, West Germany and Japan," said Crofts. "In other countries we are signiog up distributors with an agreemeot that allows for Paradyne to take over all or part of the company as a subsidiary in the future."

The total European staff was 40 at the beginning of the year, is 60 now and is expected to be 80 by the eod of the year.

The company was started by two engineers in an office over a ladies' hairdresser in Tampa, Florida, in the late 60s.

It was 1974 before either of them realised that growiog and making a profit were necessary, but shortly after that they took on Robert Wiggins as president.

From 1977 to 1979 turnover tripled and from 1979 to 1981 it grew by 50% a year.

Last year it was $207 million with $27 million after tax earnings.

This year it plans to spend $20 million on research and development and 400 of its 3,200 staff are employed on R&D.

CROFTS . . . Intends that 40% of business should be outside US.

Frost and Sullivan make 1983 forecast

by George Black

THE year 1983 will be the year of the videodisc – this is the rather late prediction from New York business researchers Frost and Sullivan, who say that the computer giants are set tn create a boom for videodisc software.

IBM, DEC, Apple, Data General, NCR and Texas Instruments may be about to lsunch into tbe market for microcomputer and videodisc integrated systems at breakthrough price levels, according to the srudy.*

By the end of the year point-of-sale systems will be standard in computer stores and will have begun to spread through all American sbops, it srgues.

This will provide the base for the videodisc boom.

* *The Interactive Videodisc Software Market*, 288 pages, from Frost and Sullivan, 104-112 Marylebone Lane, London W1M 5FU. $1,275.

DEC extends its cures from a console to French Riviera

by Jack Gea

DEC HAS increased its remote diagnosis potential for computer failures in Western Europe by opening a centre at Valbonne on the French Riviera to supplement the capacity of its Basingstoke centre, opened in January 1980.

The centre will be linked to 2,500 DSC computers, principally Vax and PDP-11/44s into which remote diagnosis capability has been built at the design stage.

The Basingstoke centre serves 1,750 systems installed in the UK and Northern Europe.

DEC says it has chosen the Sophia-Antipolis high-technology industrial park at Valbonne to extend its remote diagnosis operations because of the high standard of the French telephone network.

DEC's first centre of this type went into operation in 1977 at Colorado Springs in the US and is linked to 10,000 American and Canadian computers.

Connection to the Valbonne centre is not compulsory for customers.

But those who refuse the service are required to pay a 10% surcharge for maintenance. Remote diagnosis is provided free of charge, except for rental of a direct telephone line whose performance is checked once a fortnight.

The Valbonne centre, which will operate around the clock throughout the year, is equipped with three PDP-11/70 computers. These contain files on customers' machines and include detailed configurations, breakdown histories and preventive maintenance planning.

DEC is planning long distance modification of basic software and transmission of software within a few years when transmission speeds can be raised from today's 300 bauds to 1,200 and up to 9,600 bauds.

This will permit rapid updating of microcodes and diagnosis of network problems involving groups of customers. Systems, interfaces, modems and telecommunications links will be tested in this manner. No target date has yet been set by DEC for this new service.

The establishment of the remote diagnosis centre is a new step in DEC's European decentralisation policy. DEC hopes to create a factory in France which would become its fifth in Europe.

In 1976 President Valery Giscard d'Estaing turned down a proposal by DEC to build a Freneb plant. DEC is now involved in talks with the socialist government of President Francois Mitterrand and with French firms who might show interest in developing peripherals, software and computer terminals.

HP brings three minis to its IBM battle

by John Riley

HEWLETT-Packard announced the results of its massive organisational shakeup aimed at beating IBM at the lower end of the market last week as it launched three new replacement minicomputers for its HP 3000 series.

The company has moved from its small division approoch over the past six months and harnessed its numerous divisions into five cohesive groups. One of these groups, the Business Development Group, is now co-ordinating all HP's computer marketing to beat IBM at its own game.

"We have had the products, but IBM has had a superior selling, marketing and support organisation," said Roger Cooper, HP's European sales manager in Geneva last week. "We have now moved from being a product oriented company to a marketing company, with a non confusing interface through the BDG to get the message across effectively to our customers," he added. "We have respect for IBM, which is the first stage in beating them."

The full force of HP's new aggressive style marketing strategy will be felt immediately in the HP 3000 minicomputer arena. Last week the company announced its fifth release of MPE, its multi-programming executive operating system, which offers increased code tables, disc coaching capability, and three new minicomputers to replace older machines.

The new top of the range machine to replace the Series 64 is the Series 68, which the company claims has between 30-100% better performance. With up to eight Mbytes main memory, eight tape drives, 24 400Mbyte disc drives and 24 intelligent network processors, the company claims that up to 400 terminals can be logged on and that over 200 terminals can all be used actively simultaneously with no significant performance degradation.

COOPER . . . "We have had the products."

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MICRO NEWS

Intel's low power 8086 is here

THE low power version of Intel'a 8086 16-bit processor has arrived. The CMOS design from Harris Semiconductor, spawned by a technology exchange agreement sealed in June 1981, is now being sampled worldwide, with European volume delivery from Harris promised for September.

But the CMOS chip, which uses only 10% of the electrical power, of Its NMOS forerunner, is unlikely to hit the really high volumes needed to satisfy the commercial marketplace until Intel comes on-stream with its version of the CMOS design, expected in sbout a year's time.

A CMOS veraion of the 8086's externally eight-bit brother, the 8088, is scheduled for the first quarter of next year.

The CMOS processor, 80C86, joins a bunch of CMOS peripheral chips from Harris allowing complete CMOS systems to be assembled. The power savings and ability to withatand harsb environments inherent in CMOS chips make them sppealing to builders of portable equipment and military and industrial control kit.

And the 80C86 is only the start of the line of high performance CMOS processors. The agreement between Harris and Intel was that Intel would provide design and test information to Harris to design CMOS 8086 and 8088 parts, which Intel would then build aa an alternate source.

But beyond this was a commitment by the two companies to work closely together on future devices, and to make the two companies' CMOS processes compatible, so that the same designs could be built by both companies.

This process compatibility is starting now with the 80C86, and will continue to move closer as the companies work together.

The most obvious processors to appear next in CMOS versions are the iAPX 186 and 188, which extend the 8086 instruction set while integrating many peripheral functions on to the main chip. This reduces the chip count in a system, saving board space – and so cost – and enhancing reliability, again features likely to attract makers of portable kit.

Announcements by Intel and Harris on the next designs to be moved over to CMOS are likely in two or three months. Intel has already stated its intention to design all future devices in its CMOS technology.

The Harris 80C86 processor is directly compatible with the existing NMOS design. It bss pin-for-pin similarity, the same TTL level input/output specifications, performance parity at 5MHz and complete software compatibility. An 8MHz part is set to appear towards the end of this year.

MIKE BREWER . . . Has moved away from Apple, but remains a dealer.

Apple pioneer whets its personal appetite

APPLE pioneer Dota Efficiency, the company which first brought Apple micros intn the UK, is moving with the times. It has just added the IBM Personal Computer to its list, and has marked the event by changing the name of its microcomputer systems division in the desk-top computera divisinn.

Marketing director Stephen Brewer explains: "Our loyalty tn Apple is important to us for obvious reasons," he says, "and we shall continue to expand that part of our business. But the npportunity the IBM Personal Computer offers cannnt be missed."

Data Efficiency first came into micros through Microsense, the first UK Apple distributnr. Microsense was taken over by Apple in 1981, as Apple Computer (UK), under tbe two Brewers – Stephen as marketing director and brother Mike as managing director. They bave both since moved away from Apple, but Data Efficiency remains a desler.

STEPHEN BREWER . . . "Opportunity cannot be missed."

"The retail marketplace is maturing," adds Stephen Brewer. "Customers are becoming more certain of their choice – usually Apple and more recently IBM."

Rochdale becomes a micro innovator

by Nuala Moran

A PILOT scheme to promote the use of microelectronics by British industry was launched in Rochdale at the end of June.

The Micro-Electronics Awareness scheme was initiated by the Department of Trade and Industry. Funding of £54,000 a year for two years has come from the Trustee Savings Bank, Greater Manchester Econnmic Development Corporation and Rochdale and Stockport Metropolitan Borough Councils.

Under the scheme, an industrial adviser and a consultant will make short visits to manufacturing companies in the Rochdale and Stockport areas to assess opportunities for applying microelectronics. Companies will then be advised about government schemes that provide financial assistance for introducing new equipment.

The funds available will provide help for 160 firms with a process and a product that would benefit from innovation.

The scheme is the brainchild of Professor Michael Hampshire of the University of Salford. It is being run by the management committee of the Microelectronics Awareness Centre at the university, under his chairmanship.

Don't impose, says manager

by John Kavanagh

COMPUTING management should develop guidelines for end users considering microcomputers – but should not impose standsrd machines on them.

So says David Eagles, technology research manager at TSB Trust Company, part of the Trustee Savings Bank, whn is writing a businessman's guide to buying microcomputera.

"The view that the data processing department should be a central think-tank on micros is awful," says Eagles. "Imposed solutions don't work. The user is in the driving seat: it's his application and ha's the one who will run it."

TSB gives end users a set of guidelines when they want their own system. This helps them define exactly what they want in terms of functions and suggests questions to ask dealers.

"If you specify the functions properly and get the right dealer, it doesn't matter what machine you get," Eagles says. "Some machines have big software libraries so you think about standardising – but it has to come through leadership."

Eagles' comments come after a recent National Computing Centre survey, which showed that nnly a third of end users esll nn the data processing department for advice or support when they buy their first microcomputers.

Micro News is compiled by Robert Parry

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SOFTWARE FILE

Tycom to hedge bets on future

by Claire Gooding

MANUFACTURER Tycom is hedging its bets with a selection of operating systems for its new "future-proof" computer, the Microframe. Tycom has signed a deal with Logica, the UK supplier of Microsoft's Unix-based Xenix, and another with MPSL, for MBOS and BOS systems.

Tycom appears to be making sure of plenty of applications for the Microframe in the short term under BOS, while keeping a finger in the Unix pie for the future. Other operating systems on offer with the 68000-based Microframe include Digital Research's CP/M-86 and CP/M-80, Microsoft's MS-DOS, and the UCSD-P system.

Tycom's choice of Xenix was made on the basis that MS-DOS Version 2.0 will provide an upward path to Xenix. Xenix will be available as a plug-in board option, leaving the native 8088 processor to handle I/O operations.

Sixth Assassin

ICI's agricultural division has written a new text retrieval package to run on IBM mainframes under MVS, DEC's Vax range and ICL's M829 and 2900s. The system, named Assassin-6, is a revamp of a suite originated in the 1960s. Previous Assassins have been widely used in industry, commerce, government and research.

Training venture

US MICRO maker Wicat has agreed with Thorn-EMI's Datasolve on a joint venture in computer-based training. Datasolve has recently been working with the Manpower Services Commission on Project Author, aiming to produce consultants and course authors for the subject. The project will use Wicat's Wise software. Wicat has also sold computer-based training systems to British Telecom and the Defence Ministry.

WP package

TALBOT Computers of Bournemouth has brought out a word processing package for the portable HX-20 Epson micro. Called Intext, the program converts the machine into a portable memory typewriter with printer, microcassette for storage and viewing window. Epson dealers and distributors will sell Intext in the UK, South Africa and Canada.

Deal with Yard

COBOL expert Micro Focus has contracted with Glasgow consulting engineer Yard to market its Coral 66 compilers for Intel's 8086, 8080 and 8085 microprocessors. Yard also sells compilers developed at the Royal Military College of Science for DEC Vax and PDP-11 hardware.

Roscoe option

APPLIED Data Research has added the extended timesharing option (ETSO) to its Roscoe software environment. This will allow the 1,200 Roscoe sites to support applications systems such as the SAS Institute range of products.

Price cut

INTELLIGENCE UK has cut the price of its 8-bit Micromodeller program from £645 to £250. It is converting the system for use on minis. A DEC RDP-11 version, jointly developed with Jenson Computer Services of Bristol, has already been installed at eight trial sites.

Advice for micro importers

SOFTWARE Sciences has announced a service for companies that import and distribute peripherals and microcomputer hardware.

Under contract Software will provide technical support including collecting the equipment on its arrival in the UK, testing, configuring and installation. There will also be a full inventory control service.

The service is designed to appeal to companies which have the commercial ability to sell computer systems but lack the technical knowhow.

Military style irks Budge's new boss

NEW owner of the Wang software house Oliver Budge has hit out at "drastic mismanagement" which he says nearly caused the firm to go into liquidation.

Paterasp Nirumvala, vice-chairman of Bahrain-based Information Systems International (IST), which took over the Budge operation last month, said the style of management had been "military".

"People did not feel comfortable because they were not split into groups dedicated to one task," he said.

And he blamed Budge for "concentrating on products rather than people".

"He kept on developing products after the money had run out and they were not for the right machines," said Nirumvala.

Budge intended to stay with the firm after the takeover as a consultant, but he departed after a row.

"I told him I didn't want any consultant," said Nirumvala.

Now Budge has gone off to launch another Wang-based enterprise, Regent Systems, with his former assistant Peter Gore.

Nirumvala believes the future lies with the 32-bit supermini and is to shift the firm's direction to developing software for DEC, Vax, Data General and HP 3000 hardware.

ISI will bring over its English language software developed in Bahrain for Wang machines, including packages for banking, insurance and commerce. It will continue to promote Budge's solicitors' and accountants' systems which Nirumvala praised, but will aim progressively at bigger machines.

"Budge hadn't spent much time in the industry," he said.

ISI's Middle East parent, Almosyyed International, also owns the Wang distributor for the region, and the group claims to have coraered 70% of the computer market in Bahrain, focussing on government and finance sectors.

Nirumvala also thinks Budge spent too much time on Wang word processing level applications rather than exploiting its more lucrative iavestmeat in IBM System 34s.

The new bosses have increased the payroll from 12 to 18 and hope to recruit at the rate of a dozen a year.

An announcement of a new product is expected in October.

Budge was invited to discuss the matter but was unavailable for comment.

His firm was taken over by ISI for a sum said to be in excess of £100,000 after four bidders had offered to save it from liquidation. ISI is to bring in Richard Hunt as managing director from October. Out of 22 former Budge staff 12 to 15 were expected to be offered continued employment there.

Budge's troubles came to a head when its backer, Technical Development Capital, refused it as a further cash injection.

NIRUMVALA . . . "People did not feel comfortable."

CMG sets up 20-strong Wang systems team

By John Kavanagh

WANG'S bid for the systems house market has been boosted by the formation of a 20-strong Wang systems team by the big UK services group CMG. And as the US manufacturer goes into its new financial year it is close to signing 12 UK systems houses, including some from *Digital Equipment*.

Wang aims to do 20% of its business through third parties this year.

CMG has installed a VS-80 computer to develop new Wang packages and to convert existing IBM System 34 products using Wang conversion aids, introduced early this year. CMG has sold Wang systems to two insurance companies – including one £150,000 order – and an engineering firm.

"One reason for our move is definitely Wang's push into the third party market," said John Rioch, managing director of CMG Information Services Central London, which is running the VS-80. "We're also helped by Wang's television advertising and its reputation in office automation with data processing. First-time users see themselves not as introducing DP but automating their offices."

Rioch said CMG would offer many of its System 34 products on Wang equipment. By the end of the year there would be over 20 people on Wang systems and programming alone, plus sales staff. The total systems staff was 130.

Reg Broughton, Wang UK marketing support director, said his company were wooing IBM systems houses. "These firms would have good track records and proven products because they dealt with the industry leader. Other big manufacturers' systems houses were also coming across. A Burroughs specialist on the south coast was converting its products and some DEC customers were talking of rewriting their packages.

"But DEC is not as friendly to systems houses as it used to be," Broughton said.

SOFTWARE FILE

Comserv woos drug industry

COMSERV, the manufacturing software specialist from Minneapolis, plans to break into the lucrative drug industry by tailoring its package to cope with complex government controls.

Warren Hinze, the corporation's vice-president in charge of systems planning, came to London last week to describe to representatives of the pharmaceutical firms how enhancements to its programs can help them.

Until now most manufacturers in the chemicals and drugs world have thought manufacturing software was not for them because the systems were geared towards factories and control of assembly rather than process.

Comserv has aought to overcome this hesitancy by adding to its suite, last year renamed AMAPS/Q (to signify a quantum leap), a new module for lot traceability. This is the drug firms' jargon for the ability to track a consignment from the supply of components all the way through to the consumer.

The lack of this facility has deterred the rich National Health Service suppliers from investing in software, because they have not been able to comply with the stringent legal demands. Britain, the US and Sweden have led the world with tough requirements on health services to protect their clients. Many drug firms still do a lot of tracing manually.

The prototype of the AMAPS/Q enhancements have been running in prototype form at Ciba-Geigy in New Jersey for nine months.

The first European site will be Hoechst, at Frankfurt, which is likely to be running by October.

Hoechst decided to adopt AMAPS/Q early this year instead of continuing to use its owa in-house data processing department.

About 25 prospective customers and management consultants heard Hinze's talk, including delegates from Glaxo, Roche, Fisons and Travenol.

"It needed a pioneer to convince them," said Hinze. "When Redken Labs decided to go for it, the others began to show a lot of interest."

HINZE . . . "It needed a pioneer to convince them."

IBM inspires awe with its new system software

FIRST reactions to IBM's announcement of its new DB-2 system software have been a mixture of awe and foreboding.

Although the relational database management system unveiled by IBM last month will not be available until the third quarter of next year, experts are already saying it will cause more than just ripples in the sea of software.

Boole and Babbage consultant Tom Bird told a London users conference: "I was just amazed when I looked over the functions of DB-2. Every utility from IMS is there. I was flabbergasted at how complete a product it is – far superior in many areas to what I anticipated."

And David Upham, of Relational Database Association in Seattle, predicted that the release of DB-2 could push many competitors out of the system software business towards applications for vertical markets.

"People will find it very difficult to come into this market with a lower-priced product or with a better engine. Applications could be the only way for them to go," he said.

He said DB-2 was not being considered as a replacement for IMS and was a completely different piece of software to IBM's earlier development known as System R.

DB-2 is intended to run under MVS/XA and MVS/370 operating systems and to use the SQL/DS language. It is being interpreted as part of IBM's slowly-unfolding information centre concept, designed to get data processing departments to train end-users in self-help.

The path being followed was made clearer by another recent announcement of a deal with Artificial Intelligence Corporation in Massachusetts to offer its Intellect English language query system. This will be available under DOS/VSE, MVS and VM operating systems in the US from September.

Rivals link up in bid to grab freight business

TWO former rivals at the top of the market for freight shipping systems have combined in an operation that could force out others.

They are Geisco, the American General Electric's systems house and EAC Data of Copenhagen. Geisco's customers include OCL, OOCL and Mobil Shipping; EAC's include Scandutch and the Mexican TMM. Between them they will have a formidable position in the international transport field.

By a recent agreement Geisco is marketing EAC's systems for equipment management, forecasting and data collection. EAC benefits by being able to make use of General Electric's worldwide teleprocessing network.

Geisco, like other traditional time-sharing bureau, has been moving steadily towards changing its image to that of an all-round systems house. Now it offers its shipping facilities either as the bureau's Mark III service or as a software package.

EAC was set up in 1967 to provide computer backing for transport, trade and manufacturing firms. It has offices in North America, Africa and the Far East.

"We were meeting EAC time and time again in the marketplace," said Geisco's shipping division chief John Thorpe. "The logical conclusion was, if you can't beat 'em, join 'em."

While continuing to support its old bureau customers, Geisco is now looking for emerging vertical markets to exploit and is using its telecommunications and electronic mail expertise to make transport its main area.

THORPE . . . "If you can't beat em, join 'em."

Generator has bottle

by John Riley

AN applications generator running on a Digital Equipment minicomputer has more "bottle" in it than Cobol on a Honeywell batch installation, say the bottle-makers.

York-based bottle manufacturer Redfearn National Glass has introduced Hewlett Packard minicomputers for its process plant connected to a Vax 750 minicomputer supporting the applications generator, Admins. Conversion of the central business programs, sales ledger, stock control and accounting from the Honeywell 64/DPS-2 is nearly complete after six months.

"I can't see how companies running batch installsions and toying with VDUs can contain DP departments' costs," said Keith Nelson, managing director of Celerity Software, which supplied the applications generator Admins V32.

"If those companies don't do something their costs can only spiral," he said.

Nelson claims that the Redfearn DP department had quoted seven man-years to build a purchasing system, whereas with Admins he could do it in four days. The latter figure is disputed by a member of Redfearn's DP department.

Celerity Software, exhibited Admins for the first time at the Dexpo Europe exhibition last week in London, and is distributing it for the US company Admins Inc. The product is "an applications generator, but not a program generator," explained Nelson. "It is a set of pre-written programs that cover all business functions into a business-oriented system. I regard it not as a software product but as an electronic filing system."

The future looks bleak for the 20 or so DP staff at Redfearn, and the crunch will come when the Honeywell machine is finally phased out in October 1984. Nelson says four people are concerned with the Vax working in user departments.

Software File is compiled by George Black

COMPANY NEWS

CRAY . . . *Designing Cray 3, a machine of as yet unspecified power.*

Cray outstrips world in development spend

A COMPUTER company, Cray Research, leads the US and consequently the world in terms of research and development dollars per employee.

This, along with the fact that computer companies dominate the tables of those spending heavily in terms of percentage of sales on research and development (R & D), emerge in the *BusinessWeek* annual survey of the top US companies published recently.

The *BusinessWeek* survey covers all publicly listed companies in the US having sales of more than $35 million, and is summarised in three key tables. The first of those, in which IBM appears in the number three slot, is the ranking of the top 15 US companies in terms of dollars spent.

According to this table, which includes a total of six computer companies, IBM spent $2.053 billion dollars on R & D out of total sales of $34 billion.

The number two company in terms of total dollars spent was AT & T, which narrowly beat IBM with R & D expenditure of $2.126 billion, but on a turnover of $65 billion. The number one slot goes to General Motors, the American car giant, which spent $2.175 billion on R & D on turnover of $60 billion.

Sperry Corp, now mated with Trilogy for at least part of its R & D, came in the number 15 slot with spending of $398 million. Just ahead of Sperry is Hewlett-Packard, with total R & D of $424 million.

Having covered the giants, however, the next two tables cover R & D spending as a percentage of sales, and in terms of dollars per employee. This is where computer companies really shine.

Cray Research, which is currently building not one, but two supercomputers, gets the top slot in terms of dollars per employee, with total R & D spend per worker of $20,958.

The company also comes in a very respectable fourth place in the table of high R & D spenders in terms of total sales. Cray spends 20.1% of its sales revenue on developing new machines.

Last year Cray Research had total sales, based on deliveries of about 16 Cray 1 and XMP computers, of $141 million and profits of $19 million.

The company is still building and selling the Cray 1, which was initially developed for a cost of $8.5 million, and which subsequently sold for about $20 million, one of the fastest R & D spend recoveries of all time.

Cray Research will shortly deliver the Cray 2, the non-compatible successor to the Cray 1. At the same time, it is commencing delivery of the XMP/Cray compatible range of vector processors, or supercomputers as they are more commonly known.

Work on the Cray 3, a machine of as yet unspecified power, is well established, and if its designer, Seymour Cray, follows the speed development path of his previous machines, it should come in somewhere between 5,000 and 10,000 million instructions per second.

The success of the Cray endeavour, and its very modest costs, raises a huge question mark over the vast floods of money being hurled into the supercomputer arena by other companies and governments.

The French government has decided to spend about £40 million to develop a French supercomputer. The US military is spending several hundred million dollars in the same endeavour, as is the Japanese government in its supercomputer project.

Meanwhile, a small company in Witchita Falls, near Minneapolis, continues to be profitable, successful and to develop the world's fastest computers, with the benefit of nothing except its shareholders' money and its own modest profits.

The number seven slot in the two tables covering R & D spend per employee and as a percentage of sales is occupied by Amdahl Corporation, a company facing an unusual R & D challenge.

Amdahl Corp is currently spending $81.3 million per annum, on sales of $462 million, in a bid to build mainframes that outperform both the Japanese and IBM. Its total R & D spend is more than five times Amdahl Corp's total sales.

This sum, however, is small compared with IBM's annual spend in its mainframe labs, which employ 3,500 people at an annual cost of about $250 to $300 million.

Assuming that IBM and, indeed, Amdahl Corp produce a new mainframe every four or five years, the R & D cost of a mainframe is $1.2 to $1.6 billion from IBM but something like $300 to $400 million from Amdahl Corp.

Both Amdahl Corp and IBM are now facing a major challenge from the founder of the former and the ex-chief designer of the latter.

Dr Gene Amdahl is well down the road, with his son Carl, to producing the first Trilogy Machine, which will cost something like $250 million to develop, excluding first year sales costs.

Trilogy, however, is not the only challenge faced by Amdahl Corp. Just as Cray Research is facing a massive Japanese challenge, so is Amdahl Corp.

Last year there were just two supercomputer companies in the world – Cray and CDC. This year there are six – the additions being three Japanese and another American company, Denelcor.

Whatever challenge they face, though, both Cray and Amdahl are experiencing an amazing near doubling of sales this year.

THREE MEASURES OF THE TOP 15 IN R&D SPENDING

IN TOTAL DOLLARS (millions)		IN PERCENT OF SALES		IN DOLLARS PER EMPLOYEE	
1. General Motors	$2,175	1. Policy Management Systems	26.7%	1. Cray Research	$20,958
2. AT&T	2,126[1]	2. TeleSciences	22.8	2. Auto-Trol Technology	14,365
3. IBM	2,053	3. Computer Consoles	22.0	3. TeleSciences	14,192
4. Ford Motor	1,764	4. Cray Research	20.1	4. Applied Materials	14,181
5. Du Pont	879	5. Auto-trol Technology	18.4	5. Policy Management Systems	13,954
6. United Technologies	834	6. Dysan	17.9	6. LTX	13,770
7. General Electric	781	7. Amdahl	17.6	7. Amdahl	13,546
8. Eastman Kodak	710	8. Kulicke & Soffa Industries	16.8	8. Computer Consoles	13,111
9. Exxon	707	9. Applied Materials	16.6	9. Convergent Technologies	12,288
10. Boeing	691	10. Advanced Micro Devices	16.6	10. Varco International	11,452
11. Xerox	565	11. OCA	15.2	11. Apple Computer	11,200
12. ITT	519	12. LTX	14.7	12. Intergraph	10,953
13. Dow Chemical	460	13. Intel	14.8	13. Panasophic Systems	10,772
14. Hewlett-Packard	424	14. EECO	14.6	14. Teleco Oilfield Services	10,017
15. Sperry	398	15. Monolithic Memories	14.3	15. Merck	10,005

[1] Includes $1,515 million spent by Western Electric Co and other subsidiaries, not reported in AT&T's 10-K

Data: Standard & Poor's Compustat Services Inc.

Source: BusinessWeek, a weekly magazine published by McGraw Hill World News New York.

Mitel heralds shares rise

WITH few exceptions, shares in computer companies have been rising recently, led by investor reappraisal of Mitel in the US.

Mitel, is Canadian-based and is quoted in both New York and London. Its shares collapsed to $13 when IBM decided to invest in Mitel competitor Rolm, forcing Mitel to back out of an agreement in principle with IBM to develop the DRX 2000 digital switch.

The shares have now returned to $17, about half of the year's high of $30.

According to Gregory P Richards, an industry analyst at stockbroker Morgan Stanley quoted in the *Wall Street Journal*, the company has a superb market share in its main business, sales of small private telephone exchanges, and there has been a major improvement in orders.

Reaction in New York has been conditioned to some extent by a report from prestigious San Francisco venture capital stockbroker Hambrecht and Quist, which threw plenty of cold water on the Rolm-IBM link up while continuing to show guarded optimism that Mitel would get the key big exchange going.

IBM stock, following some very optimistic remarks by chairman John R. Opel about the prospects for the remainder of 1983, has risen to a four-year high of $125. Opel's remarks are supported by companies financing customer purchases of IBM kit, which claim that business is better than ever.

Wood leaves BTG in black

THE National Enterprise Board, home of the two major constituents of the British Technology Group, has converted 1981 loss of £56.24 million into a profit of £4.2 million.

This turnround comes as Sir Frederick Wood, the chairman and architect of the turnround, announced that he expected his successor to be named by the government within a month.

Sir Frederick is leaving partly, at least, because of disagreement with the government about the future funding and direction of the British Technology Group.

He said that along with the name of his successor he expected the government to give a clear indication of what it expected from the organisation in the future.

So far, the government has shown signs of simply wanting to run down the group and dispose of its assets.

This year the group has sold something like £150 million worth of public investment companies, though the biggest and best companies like Inmos and Data Recording Instruments still remain within the group's portfolio.

Sir Frederick was questioned closely on the future of Inmos, but apart from indicating that Sir Malcolm Wilcox had a broad remit, and that there had been an approach from Commodore, he would not be drawn on how the government would dispose of its 76% holding in the company.

With Inmos suddenly looking very valuable, there was evident satisfaction on the British Technology Group board over the turnround at Data Recording Instruments.

The company is the parent of video terminal maker Newbury Data and of disc maker United Peripherals. Turnover for the whole of that group in 1981 was £27 million, which rose to £47 million in 1982 and looks set to head for £60 million in 1983.

In addition Data Recording is expected to show a profit of £2 million for 1983, compared with losses in previous years.

Although Winsford-based United Peripherals is pointed up as the plum of the group, Data Recording itself has re-established printer manufacturing in the UK, and has successfully sold large quantities of its product in the very competitive American market.

Sir Frederick described with satisfaction the British Technology Group's involvement with CDC, in the restructuring of Systime, which will probably still show a small loss this year. CDC is also tied in with the group in United Peripherals.

The combination of British money and American skill in technology management seems to be paying dividends.

CDC is also a skilled financial manager and when the flotation of Data Recording takes place there is likely to be even more excitement than usual. Most of the froth in the City to date has been about a limited number of shares in relatively small companies; Data Recording will present a bigger target for the City and also a hardware manufacturer of substance.

One slightly sour note was an absolute refusal by the National Enterprise Board to make public any information concerning the £35 million or so lost in Nexos and Insac.

The damp response to questions was that the board was responsible to Parliament via the Department of Industry and that was the only way that information, if it was ever made available, would be made known to the public.

Last year the National Enterprise Board invested, after realisations, about £13 million.

The amount of public money available for investment through the board this current year is £10 million.

Performance of past and present companies in the British Technology Group

Main profit and loss contributions by computer companies associated with the British Technology Group

	1982 (£)	1981 (£)
CAP Group	260,000	(340,000)
Logica Holdings	38,000	37,000
Logica Securities	220,000	220,000
Logica VTS Limited	170,000	150,000
Muirhead Office System	170,000	50,000
Systems Programming Holdings	(510,000)	–
Systime	(118,000)	430,000

Principal losses and gains by the British Technology Group in disposals of computer companies

	(£)	1981 (£)
Techalogics Computing	(40,000)	–
Logica Group	(560,000)	–
Ferranti Limited	560,000	1,010,000
Systems Designers International	–	1,000,000
Insac	(850,000)	(6,860,000)
Nexos	–	(34,000,000)

Company News is compiled by Kevin Cahill

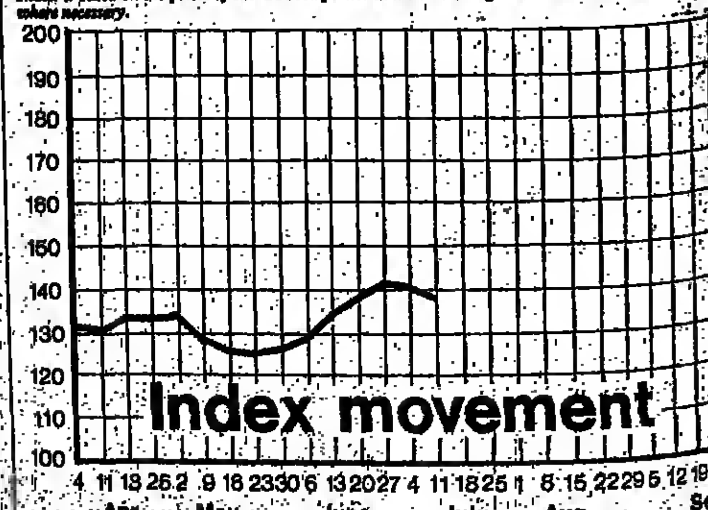
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 8/7/83 Index 138.34 Change –1.0

Pence 1983 High	Low	London Stock Exchange Stock	Pence Price	Chge	$ 1983 High	Low	US Stock	$ Price	Chge
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.



BANKING

TSB is banking on its own clearing centre

Scotland's Trustee Savings Bank will soon start processing its own cheques . . . Catherine Smith reports

TSB Scotland . . . Determined to be seen as a "real bank".

TSB SCOTLAND is shortly to start sorting its own cheques for the first time. Formed from the four largest Scottish trustee savings banks, TSB Scotland is so determined to be seen as a "real bank" that it is opening its own clearing centre.

It is by no means a sudden decision. For over a year, architects and builders have been restructuring a building at the corner of Dundas Street and Eyre Terrace in central Edinburgh. In parallel, clearing specialists have been designing the complete clearing operation, down to the finest detail.

Starting from scratch is no easy task. Yet that is what James Thomson, head of clearing, and his staff have had to do.

"The challenge we face," said Thomson, "is to get the system right, without the opportunity to use parallel runs in the testing."

Setting up a clearing centre means far more than programming the computers and getting the sorting machinery to work. A complete system is needed.

Clearings are about moving payment vouchers between banks, and TSB Scotland, like other banks, breaks them down into four kinds:

■ Debit in-clearings – cheques written by TSB customers and received from other banks;

■ Debit out-clearings – cheques taken in over the counters of TSB branches, that need to be sent to other banks;

■ Credit in-clearings – Giro credits that are making a payment to customers of TSB Scotland; and

■ Credit out-clearings – Giro credits that TSB Scotland's customers have used to pay someone whose account is at another bank.

Even for a bank the size of TSB Scotland, this represents an enormous amount of paper. The volumes vary considerably from day to day, and depend too on the time of the month. TSB Scotland has some 60,000 cheques, on average, every day, to be in-cleared to its branches. On peak days this reaches 130,000. Out-clearing cheques average 35,000 a day with double that on peak days.

There are fewer credit vouchers – on average 10,000 going out and 6,000 coming in. With nearly 300 branches, and on average about 1,000 current accounts per branch, that means a lot of sorting.

THOMSON . . . *"A challenge".*

At present, all this sorting is carried out by the Bank of Scotland and the Clydesdale Bank. Each TSB branch has an account with one or other of these. TSB staff take all the vouchers that are received over their counter, and pay them in at the nearest branch of their clearing bank. At the same time they collect any vouchers that have arrived for them.

All that is now going to change.

The objective is to get the paper to the centre, get the data on it on to the computer files, sort the paper, and get it to its proper destination. This all has to be done as quickly and as accurately as possible.

TSB Scotland will employ the latest, fastest, automatic sorting machinery. Now being commissioned in the clearing centre are two IBM 3890 document reader-sorters. These machines, each with 18 sorting pockets, should easily cope with the paper volumes.

DEWAR . . . *"IBM was an obvious choice."*

A. M. Dewar, the computer manager, explained that IBM was an obvious choice. "We chose IBM because, with so many unknowns, we had to get the equipment right. The other two banks in Edinburgh use IBM sorters. This means we have easy access to back-up – a major consideration."

Back-up and security are high in the priorities. It is fortuitous that the new clearing centre is almost back-to-back with the computer centre of the Royal Bank of Scotland. But all other precautions are quite deliberate. Twin sorters, twin processors, the use of T-bar switching equipment, ample capacity on all peripherals – these have all been carefully planned.

The building itself – once an engineering warehouse, and with solid concrete floors making it ideal as a computing environment – has been transformed into a prestige, high security office, at a cost of nearly £4 million (one-third of this for equipment and services). All sides of the building are monitored by AFA-Minerva observation equipment. A roof-top patio, felt to be too exposed and accessible, is covered by a television camera capable of panning and zooming.

Entry to the building requires a magnetic stripe key card, which doubles as a staff identity card. These cards, which will have on them the employee's photograph, will be collected from staff each night as they leave the building. To enter the computer room, or the sorter room, a PIN number must be keyed in.

When vouchers are delivered, during the night, the Group 4 Security man watching his television screen in his office can open the door of a controlled garage in the basement. The driver then delivers the vouchers, and leaves. When the door is closed after him, the security man can collect the vouchers in safety.

Vouchers will be brought from branches overnight. But before they are sent out, the branch will divide them into two bundles – those for Scottish banks, and the remainder. The branch will make up a list of the contents of each of these bundles, and prepare a summary slip of the totals. This summary slip is used later to check that there are no mistakes.

Scottish vouchers must be dealt with first, because these must be delivered by the end of the morning. The first thing that happens to a bundle is that every voucher in it is microfilmed, using Kodak equipment. Four units have been installed, and one viewer. Processing is done immediately, in-house.

Each bundle is then taken, intact, to the encoding room. NCR 1000 encoders have been chosen and there are 18 of them in the centre – ample to cope with anticipated volumes. The operator encodes the amount on to cheques, in MICR.

Credits need complete encoding. The NCR 1000 is not only able to do this; it can also check that the total encoded for a batch adds up to the total that the branch said was in it.

Encoding quality is imperative. The operators will be trained to check every batch, to make sure quality is up to standard.

After encoding comes sorting. This sort, to other banks, is done online, the data being captured by the IBM 4331 processors. As the vouchers are sorted, so is the data. The sorters make up bundles for each bank. Meanwhile the computer prepares printouts of the contents of each bundle. These printouts will detail the complete captured code-line of the vouchers.

SHAND . . . *"We'll find the difference."*

The most common problems – though it is not expected often – is to find that the total encoded for a bundle does not match the advised total.

William Shand, clearing manager, explained what action would be taken: "We'll find the difference. If it is our mistake, we'll correct it. If the branch makes the mistake, we'll send them an error advice, and a photocopy of the voucher that was listed wrongly."

The intention is to remove errors swiftly. "The beauty of in-house film processing," Shand went on, "is that we can get photocopies easily, on the same day, without disturbing the flow of work."

The rush of out-clearing takes place in the morning. In the afternoon, cheques received for branches are to be sorted into account order. With nearly 300 branches, it takes several passes, even using hexadecimal sorting, before the cheques are in branch order.

In out-clearing, because TSB Scotland will be doing its own encoding, the quality of encoding should cause few problems. But in in-clearing, another bank has done the encoding. That means, inevitably, that some cheques will be rejected as unreadable by the reader-sorter.

A full reject/re-entry system has been designed to cope with this. A control voucher tells from which batch every bundle of rejects comes. These bundles are taken to the re-entry section. Terminals are used for data entry. For each bundle, a video display shows the operator what data is missing for each cheque.

"With this system," explained Thomson, "the only cheques that don't ultimately get captured are those that are either damaged, or in some other way unreadable."

All the data on cheques will be collected on tapes, which will be driven over to the TSB Computer Centre in Glasgow for the overnight batch update of customer accounts.

The cheques and lists are sent out to branches. In the basement of the clearing centre is a large mailing room, fitted out to cope with any reasonable growth in TSB Scotland's branch network.

The centre was opened on June 14, and live running will start in September.

Throughout the centre, the impression is of ample space. As Thomson put it: "We must be prepared for exceptional growth. Our customer base is such that the volumes of cheques they use could double tomorrow."

TSB Scotland seems well prepared to meet the challenge.

PROFILE

OSBORNE . . . Jetting round Europe with news of new computer.

Trendsetter Adam can also follow

YOU either set trends or follow them if you are to survive in the micro business. You can make a comfortable killing either way – but if you manage to combine the two, things look decidedly rosy.

It was just this ability to set a trend – to produce a machine that almost immediately sired a host of rival products – while following the mainstream of microcomputing that put Adam Osborne quickly into the top five personal computer makers.

Born in Bangkok of British parents, he went to school in England, then to Birmingham University to study chemical engineering. But it was the US that beckoned, and he moved across the Atlantic to take a PhD in chemical engineering at the University of Delaware. Three years each with Kellogg and Shell followed, then he founded his own company in 1970.

Programming and technical writing consultancy to the mini and micro industries led to his big break in 1975 – the publication of his book *An Introduction to Microcomputers*. Another 40 titles on microelectronics and microcomputing followed.

by Robert Parry

It was the sale of this first company, Osborne & Associates, to McGraw-Hill in 1979 that gave Osborne the cash to set up in the micro making business himself, bringing to bear his ideas of the future market trends gleaned from his years as a columnist and micro guru.

Osborne Computer set out the micro to plug the gap he saw in the market. The first Osborne 1 appeared in June 1981, a cheap portable machine which, because it bundled a suite of well-established software all in for the basic price, that has become the yardstick for a whole new class of micro.

And now, with sales of this original machine having propelled the company well up the micro pecking order worldwide, Adam Osborne is jetting round northern Europe carrying the news – and the first models – of his new computer, the Osborne Executive.

Like his first offering, the Executive is basically a desktop machine that you can move around easily. Dubbed "portable" by Osborne – but more commonly regarded as "transportable" by the market that has since seen the arrival of real lightweight machines – the machines are an arm-tugging couple of stone.

As the publicity material claims, Osborne created the concept of portable, low cost computing. The aspect that was most immediately seized upon by the public was the transportability, with every new "portable" machine weighing itself up against the Osborne 1.

But the trend he set that will have a more lasting effect on personal computers generally was the low system cost he achieved through bundling a standard set of software with his machine. The software is from outsiders, and includes such all-time favourites as WordStar, SuperCalc, and the CP/M operating system.

The market's ready acceptance of his first machine was driven by the familiar hardware – albeit unfamiliarly packed – based around the Z80 processor, the familiar software companies involved – companies he knew well from his journalist and consultant days at Osborne & Associates.

Because of this avid embrace of well-established hardware and software, the old Z80-64K-CP/M cliche, Osborne himself claims to follow trends rather than set them. With the first models of the Executive he is following his own trend rather than other people's moves to lighter machines.

10 YEARS AGO

FROM COMPUTER WEEKLY OF JULY 12, 1973: The government approved aid of £25.8 million towards developing ICL's New Range of computers, estimated at costing £160 million in total from 1971-78 . . . Ferranti made Heathrow the first airport in the world with its own air traffic control simulator . . . Thorn Industries acquired UK rights for IME range of visible and desk size computers . . . F. W. Woolworth ordered about £1 million worth of ICL VDUs.

COMPANY PROFILE

Gould figures that it's now all one big happy family

THE top men at Gould are wearing a small figure 1 on their left lapels this year. It is not to symbolise the fact that they are first in any category although most of them are quietly confident that they are leaders in a number of fields – but to emphasise that Gould is one company.

The concern with identity is more than just the average management fad. For most of the people now working in the Gould empire were not in it four years ago and most of those in it four years ago are now out.

In 1979 Gould was an industrial and electrical conglomerate with sales just over the billion dollar mark. It then decided to shed its industrial and electrical products holdings and move into electronics.

Bill Ylvisaker, chairman and chief executive officer, said: "We did this for two reasons. First because it was the market that was growing the fastest, taken before profit and return on investment. Secondly we believed that there were about to be major changes in the industrial economy of the world."

YLVISAKER . . . "Success comes from people."

In the four years since taking the decision the company has taken in $800 million from the sale of its industrial and electrical products divisions. And it is about to sell the historical basis of the Gould empire, its lead battery division, for $300 million.

The New York Stock Exchange early in June gave its vote of confidence to the company's management by boosting the Gould shares to a record high of $42, after a two dollar leap in one day.

But Gould's jump into electronics was not as smooth as a simple recital of its successes would seem to imply for the company met with sharp rebuffs in its first attempts at buying its way into microprocessor manufacturing and mini-making.

In late 1978 and early 1979, Gould was involved in a behind the scenes battle with the UK General Electric Company to take over or buy part of mini company Modcomp. The mini-maker put both its suitors off and elected to stay independent.

Gould then turned around and put in a bid for Fairchild Semiconductor, one of the pioneer semiconductor firms. The company's management described the bid as unsolicited and rejected the $300 million deal. Gould, undeterred, upped the ante by three dollars a share to $27 and then to $70 a share in the first weeks of May, 1979.

Within a week Fairchild had announced the surprise acceptance of a bid from the oil technology giant Schumberger at only $66 a share. Gould had already started litigation designed to force Fairchild's board to accept its own offer.

Gould then backed out of the Fairchild negotiations and suits and turned its attentions to another semiconductor firm, Mostek. The California-based microprocessor maker made a panicky run into the welcoming arms of United Technologists, a US holding company.

The management of both the semiconductor firms had wanted no part of a deal with Gould and in the case of Mostek it had been rumoured that the company's corporate officers would have left if the Gould bid had succeeded.

For Gould had the reputation of being a very hard company. It had built up its electrical and industrial empire under the tough, and some would say, ruthless, leadership of Bill Ylvisaker, who had taken over in the late sixties.

by Ron Coates

Harry Caunter, executive vice-president and 20 year plus veteran at Gould, recently described the firm's changed management style as "quite a change. We used to take over dud companies, throw the top people out and put in our own management. Now we take over good companies and leave the management there. We put money behind them and make them better."

And Ylvisaker said: "It has involved a change of mind set – the way of managing the company. Success in electronics comes from people and creativity and we found that we had to allow more entrepreneurship."

Now Gould has moved much more of the responsibility and the risk taking to its divisional levels and has adopted a committee style of management from the board. Always one to take advantage of an opportunity, Ylvisaker is delighted to point out that the new style of management has reduced corporate overheads by 25% – a saving in cash of $8½ million a year.

Gould would appear to have been pushed into its "change of mind set" by its rebuffs in the late seventies. When it came back to the market in September, 1980, it was successful and picked up Systems Engineering Laboratories, a builder of powerful 32-bit minis for scientific and industrial applications, for $150 million.

And the top Gould team are eager to point out that the SEL management are still in place after three years. The company's acquisition rate began to take off within a year of the SEL take-over.

In February, 1982, it sealed a deal for the take-over of AMI (American Microsystems Inc) and finally acquired the semiconductor company it wanted. In April it picked up Bryans Southern Instruments, a UK-based graphics and recorder firm and in November it bought Dexcel, a California based Gallium Arsenside specialist.

This year the company bought into UK network specialist Telesis and did not buy US-based Grafitek.

David Simpson, Gould president and chief operating officer, is quite clear on what he thinks the benefits of being bought by Gould are. Pointing to SEL he said: "It made it more successful. It was a successful company and we could afford to invest the right kind of money to make it more so.

"And at the AMI they had very prudent management. They were not building the facilities that they needed because they didn't have the cash. We put $145 million into it last year and will do the same this year."

AMI has doubled its fabrication facilities in the US and a joint venture in Austria with steel giant Voest Alpine which comes on stream later this year will replicate its US capabilities.

And for new projects within the company Simpson points with some pride to its new multi-station system Power Stations.

Gould will be on the look-out for software companies working in Unix and on 32-bit architecture, preferably in a particular segment of industry.

DOWNTIME

Fame pulls in riches

FAMOUS people are much in demand to do the honours at official openings. Only the other day, Systime was honoured by a royal scissor-wielder.

It was one other than Princess Anne who opened Systime's new £20 million Leeds HQ, and, coincidence of coincidences, when La Phillips tried her hand at a lottery terminal, she won £1,000.

Quick thinking on the part of vice-chairman John Gow was required. What could be done with the unexpected windfall? Luckily, he just happened to have a cheque for £1,000 about his person already made out to the St John Ambulance Brigade.

Should you be thinking of renting a celebrity to open your new Portakabin in Biggleswade, I can inform you that there's a three-year waiting list for Charles and Di, whereas you can get Anne pretty quickly.

And for the price of a packet of wine gums, you can have me.

PRINCESS ANNE . . . Scissor-wielder.

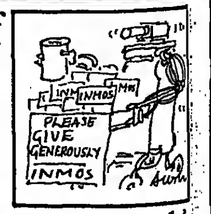
Off the cuff

IT'S not easy being a PR company. Each day, the *Computer Weekly* postbag threatens to cause unpleasant injuries to the postman as he staggers in with at least three trees-worth of invitations to launches and lunches.

Even the livers of us hardened hacks could not hope to survive if we were to attend every hunflight, so it's up to the PR people to convince us that our lives would be enriched by dropping in on their particular thrash.

A valiant effort to do just this arrived only last week. The company in question sent a single cufflink with the promise that, should we attend its do, we would be presented with its mate. Clever stuff, eh?

Only one thing spoiled the plan. The company sent us four copies of the invite and four single cufflinks.



Tune into this

OFT have I wondered as to the sort of person who reads this august journal (and the jolly odd) and my worst fears were realised when I received a suggestion for another song title and associated bit of software.

Alpha-Centauri director Norman Paterson suggests the following: "Let's get Viscalc", by Olivia Newton-John.

Aaaarggh!

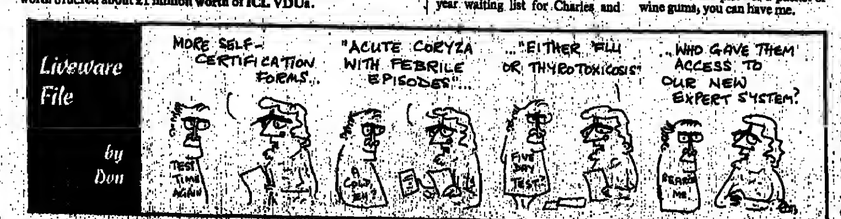
Make war games not war

WHILE lousy pinko subversives protest about the increasing use of computers in warfare, the Canadians are replacing war with computers. It would appear that the men in woolly hats and check shirts are so impoverished when it comes to buying guns and bombs that they can only afford one real war game a year.

Instead, deaths, maimings and wanton destruction are simulated on Apple II micros. Operation Rapid Thrust ran for 24 hours over a weekend (with the war being stopped at bedtime each night) and you will no doubt be pleased to learn that the Canadians only lost 450 men, whilst killing a healthy 650 simulated bad guys.

At the risk of being indundated with white feathers, might I be so bold as to venture that we supply Reagan, Thatcher and whoever the geriatric Russian is this week, with Apple IIs and let them persist they're destroying the world?

Chail



ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, July 14, 1983

When will British industry learn?

ONCE again the hoary spectre of the "brain drain" has been raised, on this occasion by the head of the government's Alvey programme.

But there is a slight difference. In the sixties, the brain drain was used as a somewhat perverted excuse for British industry. This country's top brains were being wired by the money and glamour of working in the United States.

It was therefore no wonder that British industry could not compete – it's best people were deserting it. This ignored one crucial fact. The vast majority of the people who went abroad would have preferred to stay. Indeed many, for example Robb Wilmot, Colin Crook of Zynar, one of the top men on Motorola's 68000 chip development, Dr Melvyn Larkin, also of Motorola, now of Plessey, seized the first opportunity to return.

They went because the United States was where their work was appreciated. There industry was putting its efforts into research and, Oakley was too polite to tell the industrial section of his audience that the reason that foreign companies could lift British ideas was simply that they were quicker and smarter.

Highly successful companies such as Gould, Prime and Computervision have come shopping for the UK's computer aided design and manufacturing expertise. And they have bought almost all of it that wasn't nailed down. Gould, indeed, is still looking.

These British companies were all ones that were doing reasonably well, but could do better with more resources behind them. They had been languishing on the doorsteps of UK industry for years to little avail.

The private UK finance house Investora in Industry, formerly Financo for Industry, last week also issued a call to its fellows to pay attention to what UK academics are doing and are capable of.

The call cannot be made too often it would seem. The tragedy is that it need be made at all. It would be a national scandal in Japan were a UK company to exploit the work of a Japanese academic team. In the UK it is commonplace. The question is, will British industry ever learn?

Let's be frank . . .

GOVERNMENT agencies are an easy target, both for scandal-hungry reporters and for aggrieved suppliers of goods and services. So let us be fair and not jump to the conclusion that the computer procurement body, the CCTA, has been at fault in its choice of a machine for Queen's University, Belfast.

After all, how can it win? If it recommends a foreign manufacturer, it faces an outcry for "disloyalty", not backing indigenous talent and the attendant warnings about driving our best brains overseas. If it opts for ICL – and there may be no overriding reason why it should choose one rather than another in such a situation – then there is another lobby at its throat for alleged discrimination, corruption or whatever.

Suspicions are aggravated, however, by the whole extraordinarily complicated procedure by which these issues are decided. It is extremely difficult to find out in this, as in other supposedly "public" affairs, who is responsible for the outcome.

Is it the Universities Computer Board, the CCTA, the Department of Education or the Treasury? It is not easy to see what would be the result if Queen's vice-chancellor Peter Froggart heeded the call from his professor of medical statistics Tony Greenfield not to sign the cheque for the ICL contract.

If there is nobody who understands the proper procedure, the matter could bog down in a mire of bureaucracy and the Belfast academics would be forced to wait indefinitely for the replacement system. That would be the worst of all possible outcomes.

The moral of the tale seems to be that more open discussion at every stage would at least help towards getting satisfied end-users. And they, after all, are the people who count.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by Len Unsworth of Salford, who wins £5.

Finally there is Basic. That's the name of the computer language designed to be friendly to novices like me. Yes, you've guessed it. With friends like Basic, who needs enemies?

Daily Mail

LETTERS

The lesson for Leyland

I READ with interest your article (*Computer Weekly*, June 30) about Leyland Trucks' current experience with material planning systems.

However, I was a little surprised and dismayed at the unsupported endorsement the article appeared to give to AMAPS, and the fact that the author seemed to miss the most outstanding conclusions from his interview.

While AMAPS may well be reasonable software and the techniques of MRPII may be of value to a manufacturer, it was clear from the article that AMAPS and MRPII were not yet installed or being used at Leyland, unfortunately despite the headlines around the article Mike Waller, the author, gave us no insight into the special value of the package or the technique of MRPII.

It is clear from many manufacturers' experiences that the techniques of MRP represented in both packages (MAS, Copics, Maspics to name but a few of the major ones on the market) and in-house written software have given tremendous benefits to the users in terms of reduced inventory and increased control of all aspects of the production process.

The interesting conclusions that I would like to draw from the interview as it was reported is first that the implementation of Leyland Trucks' MRP system (in use "since the 1950s") was clearly not successful. It appears that this was not a fault inherent in the software but in user attitude. Education and enthusiasm since the start of their new project has enabled them to say "even before AMAPS we've taken £7 million out of inventory", and presumably that saving was made using their old MRP system.

A second factor of interest is that it required a visit to the US to spark off this enthusiasm. It is a fact that US attitudes to manufacturing are in general more positive and productive than in the UK. Although many believe the Japanese have some unique abilities in this area it is true that techniques used successfully in Japan were developed in the US and are merely borrowed from some of the best organisation there.

It is almost sad that such a company like Leyland, like many other British manufacturers, has had techniques developed in the US in the 1950s and 1960s available to them for nearly 20 years before they learn to reap the benefits.

To return to the article, AMAPS and MRPII (as opposed to MRP) may or may not hold great benefits for Leyland Trucks. This is not shown either way, and it seems too early to assess. What has benefited the company tremendously – and here I guess Comserv does win praise (as well as sales) – is its user education programme.

A nice word from America is quoted in the middle of the article: "Don't get excited about your new MRPII system; get excited about the old one. Get that working properly. . . ." Therein is the lesson to be learnt.

PAUL MYERSCOUGH
London NW3.

VME views

IN Andrew Thomas' VME article (*Computer Weekly*, June 30) it is unfortunate that a reasoned history of the evolution of VME should also have been the vehicle for a collection of highly biased jibes against MVS and MVS/XA.

Doubly unfortunate is that the statements made are largely incorrect. The average MVS installation does not have 15 systems programmers: four to six is more likely. Conversion to XA does not require two machines: the VM/XA migration aid is specifically designed to avoid this. Migration to XA should not take two years: three months' planning and three months' full testing is more likely.

M. SCOTT
London W2.

The pain of SSP

YOUR correspondent Cliff Dilloway takes great pains to draw distinctions between a practical view of SSP and a legalistic view of SSP (Leners, June 16).

The net result is that he provides some useful explanations as to why we are receiving queries by the score about SSP and payroll administration difficulties.

Apparently some DHSS offices and some PAYE specialists, such as your correspondent, have promoted SSP administration as being a minor addition to normal payroll routines.

This "practical" view of SSP presumably explains why so many monthly paid employees are not issued with SSP Exclusion Forms, SSP 1(E), or SSP Transfer Forms, SSP 1(T), within the required time limits. However, we are advised by Dilloway that rules are there to be broken, so does this mean hard luck for the employee who is unable to claim State sickness benefit at a time when the cash is required?

The practical Dilloway finds the legal rules on daily offsetting SSP and contract pay somewhat laughable. According to his letter an employer who fails to offset correctly breaks no laws.

Yet employers who join in with the laughter, and handle daily offsetting in the cavalier fashion recommended by your correspondent, will laugh on the other side of their faces when prosecuted under Section 9 of the Act and face £1,000 fines, three months imprisonment, or both. And the employee who is underpaid SSP because of offsetting breaches by the employer will also find it hard to see the joke.

However, let's not get legalistic.

Unfair to Prolog

PROFESSOR COLIN is of course right to point out that the Tower of Hanoi problem can be solved as easily in Pascal as in Prolog. However, the latter half of his letter is grossly unfair to Prolog. Prolog (and Lisp) excel with problems involving complex data structures – such as algebraic manipulation programs, natural language understanding programs, etc. Unfortunately such programs are too big to explain in a magazine article.

Several systems now exist (such as Salford University's Lisp/Prolog system for Primo hardware and Surrey's Poplog) to permit Prolog to be mixed with other languages. This should permit very lucid Prolog programs to be written, with certain operations which are not suited to Prolog being programmed in other languages.

Having worked on the above mentioned Lisp/Prolog system for some time now I see a bright future for the language – solving problems too hard to be solved in Pascal.

Dr DAVID BAILEY
University of Salford.

Separate organisation

PLEASE allow me to correct an error in your article concerning Scientific and Research Staff (*Computer Weekly*, June 30).

My comments to your reporter referred to the situation in both the University of Bristol Computer Centre and the Avon Universities Computer Centre, the latter organisation being responsible for the operation of a Honeywell Multics system on behalf of the Universities of Bath and Bristol.

However, the University of Bath Computer Unit is a separate organisation under the directorship of Professor J. P. Fitch and is thus one for which, contrary to your report, I do not have any responsibility.

A. R. GRANT
Director
School of Mathematics
University of Bristol.

Meccano can teach ICL

I SEE that your readers include Meccano enthusiasts who can identify with recent advertising (*Computer Weekly*, June 9). The absence of nuts and bolts pointed out by Roger Wallis may indeed be a Freudian slip by ICL.

Personally I am convinced that nuts and bolts were the cause of Meccano's eventual and much lamented demise. Real Meccano had cheese head bolts and square nuts. New Meccano had round head bolts and hexagonal nuts. This subtle change may have saved brass (no pun intended) but it also made it almost impossible for anyone with less than three hands to work with.

How do you hold a small round headed screw straight between thumb and forefinger?

Let's hope ICL learns from Meccano's mistake.

J. N. CHAPPLE
London SW18.

The Editor welcomes letters commenting on subjects published in Computer Weekly, *or on original topics. All letters must be accompanied by the writer's name and address, not necessarily for publication.*

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WORKPLACE

Cobol law proposal hits a hitch

PROPOSALS to settle the next key issue in Cobol are causing concern among some members of the British Computer Society. The issue is screen handling, and concern focuses on a proposal just submitted to Codasyl, which is to Cobol what the House of Commons is to British law.

The proposal attempts to define how screen handling should be implemented and linked into Cobol at a time when many companies are going it alone with their own software. Micro Focus, for example, has a product called Forms 2 for screen handling.

The view of most of the BCS Cobol Specialist Group is that the proposals are too biased towards mainframe users who enter whole screens of data at a time and then press a return key to file the information.

On micros, it is possible to enter data one line at a time. When running order entry, it is then possible to input an account number and have it checked on the database of customers before filling in the details.

"Users of micros who have this kind of interaction would not be happy with the new proposals," says Tony Sale, of the BCS Specialist Group.

Sale thinks there should be an option to do it both the mainframe way and the micro way. "I suggest there should be a closely coupled environment and a loosely coupled environment."

As Sale is also a member of the Screen Management Task Group – the Codasyl sub-committee responsible for the report which, continuing the parliamentary analogy, is rather like a White Paper – there is clearly some division to be settled before any proposals become Cobol law.

Sale thinks there should be a division of labour between the intelligent terminal and the central computer in the case of mainframe use. The terminal would calculate the co-ordinates of the pixels, which are the individual items of information on the screen, and perform preliminary validation of data. Then it would be possible to interact, with the mainframe field by field, or after a whole screen has been keyed in.

Last word on the parliamentary analogy. The equivalent of the House of Lords is ANSI, the American National Standards Institute, and of the Queen, ISO, the International Standards Institute – which usually puts the rubber stamp where it is told.

Finch helps the three young Norwich winners to hold aloft their trophy.

Top of form in technology

A SCHOOL team from Norwich has won the first national QUIZ IT, with a formidable display of all-round computing knowledge. Three boys from Thorpe St Andrews School beat Portsmouth Grammar School to the £1,000 first prize in the final in Liverpool.

Questions were fired by BBC TV *Tomorrow's World* presenter Michael Rodd, and the trophy was presented by Bob Finch, managing director of the competition sponsor, Computing Technology.

Several hundred school teams of O-level students, aged 14 to 17, have been competing this year for the prize in regional and inter-regional rounds, organised by the British Computer Society. The six regional winners turned up at Liverpool for the semi-finals, and the final was held immediately afterwards.

I was given some of the questions to flex my wasted wits, and not one did I answer correctly.

Here are two of them:

Q: A parent that helps to cure a bad back?
A: A Motherboard.

Q: Passes without pretence?
A: Real time.

With cryptic questions like these, the Norwich school did well to score 85 out of 100 in the final, with Portsmouth trailing at 77.

REDHEAD . . . "The aim is to make the micro palatable."

Micros for the masses – minus the jargon

BBC PRESENTER Brian Redhead is already famous for his television series which tried to bring the micro to the business masses.

He has now chosen to exploit his talent for jargon-free exposition with the launch of a video called The Micro-Computer in co-operation with BBC Radio 4 producer Trevor Taylor, and the National Computing Centre.

"The aim is to make the micro palatable to a larger audience," enthuses Redhead. "We use as little jargon as possible, define what few terms you need, and stick to them."

Terms evoked by Redhead in the introductory video to what promises to be a refreshingly down-to-earth series include "software", "byte" and "floppy".

Future videos in the series will cover more specialist topics like database software, word processing and accounting.

A later series may introduce sophisticated notions like networking.

The emphasis will be on software, insists Redhead. The introductory video includes an exhortation to buy existing software packages rather than try to re-invent the abacus.

David Fairbairn, managing director of the National Computing Centre, also features prominently on the video, and urges people to consider using program generators rather than doing their own thing in Basic.

Redhead adds that one aim of the program is to coerce potential buyers to seek advice from the NCC's own service.

Watching his own video almost a year after it was filmed, Redhead wished that producer Taylor had made him restrain his flamboyant mannerisms a little. But he does at least succeed in breathing a little life into the unexciting looking plastic boxes.

"The Micro-Computer" costs £29.90 plus £1.75 carriage and insurance from Double Tee Productions of London.

Basic guide to good style

BASIC has often been slammed by the purists for its poor structure and tendency to encourage bad programming habits. Being easy to learn, it gives people the illusion that they are master of the programming art before they are even apprentices.

Instead, pupils of computing should be taught a sound structured language like Pascal. Or better still, one of the new generation languages like Prolog that are not slave to the old von Neumann ideal of guiding the computer step by step through the calculations.

This at least is the argument. Like many arguments it begs some questions and ignores key factors such as the quality of the teaching.

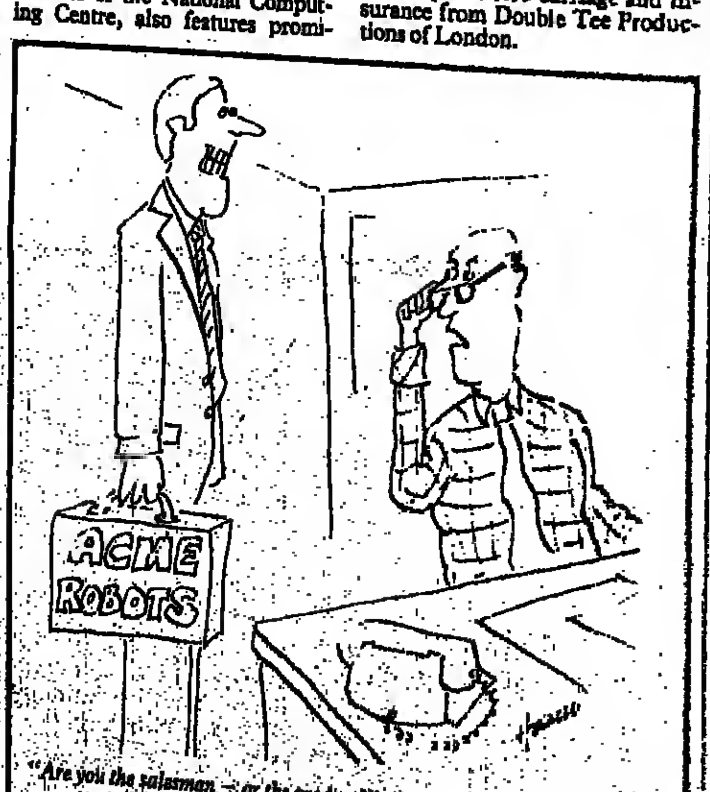
True, Basic has a poor structure, but this does not preclude the programmer from writing well-formed code, if taught to do so. Likewise it is possible to write formless code in Pascal.

This sentiment has been caught admirably in a small booklet, Basic & Pascal in Parallel, by S. J. Wainwright, available from the London-based publisher Bernard Babani.

Do not be confused by the title, the book has nothing to do with parallel programming.

Instead, it develops simple programs in the two languages simultaneously.

The author believes good style will come just as easily in Basic as in Pascal to anyone who follows the book's examples carefully.



"Are you the salesman – or the product?"

What ingredients make good art?

LINGERING fears that our society will one day be dominated by computers have been rekindled by a display of drawings at London's Tate Gallery.

The exhibition features a plotter, driven by a program on a Digital Equipment Vax computer, turning out drawings at the rate of six an hour.

The program is a kind of expert system, written by former abstract artist Harold Cohen, which uses a base of knowledge of the fundamentals of drawing such as perspective. "Most expert systems draw inferences, while mine draws pictures," says Cohen. "That is the only difference."

■ Harold Cohen will be talking about further implications of his work at 7.15, July 19, at the ICA in Pall Mall, London.

Workplace is compiled by Philip Hunter

A syste… to put t… expert… at ease

MICHIE . . .

PUZZLER

CROSS ROADS

DANGER

PEOPLE

■ Oxford Software, a British systems house specialising in the implementation of computer programs for 16-bit microcomputers, has appointed Caroline Appleby (above) as sales manager. She will be responsible for spearheading expansion into new markets in the southern counties. She joins Oxford Software after a career in sales support at Versatec Electronics, where she spent five years.

■ Prime Computer (UK) has made Richard Ferre field engineering manager for its City district. He will be responsible for providing engineering support for all Prime installations in an area including the City of London, south Essex, Kent and Surrey. He joined Prime 11 months ago as branch field engineering manager for the South-west branch of Prime's City district.

■ John Beles has been appointed marketing manager of Gothic Crellon, the new company name for Thorn EMI's extensive electronic components and microsystems distribution operation. He has joined the company from Abacus Electronics, where he was marketing and operations manager.

■ Robert Allerston has been appointed branch manager for the western branch of Rediffusion Computers, based in Bristol. He joined the company in 1979 as territory manager for the northern branch and was appointed area sales manager in 1981.

■ Sintrom Electronics has promoted Chris Klog (above) to product manager for the company's graphics products group. He will be responsible for the sales of the company's range of plotters and digitisers from Houston Instruments, the Polaroid videoprinter hardware and the new graphics controllers from Raster Technologies. He joined Sintrom nine months ago as product specialist for the company's Hewlett-Packard division.

■ Alimand Computer Systems, the City-based software house and consultancy, has appointed Roger Dinmock as marketing and sales manager. Dimmock, formerly a banking consultant with CMG, will initially concentrate on expanding the client base for Alimand's specialised services and products in the banking and financial sectors.

■ Bryan Mills has been appointed a non-executive director of the newly formed company FI Services. He will look closely at overall marketing and sales strategies. He was previously the chairman and co-founder of Computer Management Group. Mary Anne Feerick has been appointed chief executive officer of F International (USA), based in New York State, and will be responsible for developing its client base on the East Coast of America. Dr Kit Grindley (below) has been appointed special research consultant to F International's Micro Services Centre, which was established to develop his Systematix program generator for microcomputer projects. He was previously a senior partner with Urwick Diebold.

■ Terry McIntyre (above) has been appointed keyboard sales manager of McMurdo with responsibility for the marketing of keyboard products under the recently announced joint venture agreement between McMurdo and Orcom. He will liaise closely with the Paris-based Orcom Company. McIntyre comes from ITW Electronics Europe, where he was applications engineer, keyboards.

■ Ian Tong (below) and Robert Stichbury have joined Oyez Computers, a subsidiary of the Solicitors' Law Stationery, where they will be responsible for selling in-house computer systems for legal accounting and other business requirements. Tong will cover West and North-west London and the Home Counties. His previous experience includes salesman for medical products for consultant anaesthetists and product manager for a hand-made crystal glass company. Stichbury will concentrate on East Anglia, East and North London. He was previously involved in selling computer-based financial systems.

■ Caroline Martin has joined Pete and Pam Computers, augmenting the technical sales/support department at the company's London office. She was formerly a systems analyst at the Diamond Trading Company for seven years.

■ Wisbech Computer Services has appointed Steve Hunter as systems software manager. Formerly with Equinox Computer Systems, he will be involved in the transfer of the company's Wispay payroll system to other computers.

■ Jacques G Maisonrouge, IBM senior vice-president, has been elected to the board of directors of International Business machines Corporation. He continues as chairman, IBM World Trade Corporation, member of the Corporate Management Board and the Business Operations Committee and Member of the board of the IBM World Trade Europe/Middle East/Africa Corporation.

■ Geoffrey Finlay has recently joined the IBM specialist software house, Insight Database Systems, as marketing director. He was formerly international manager with the McCormack and Dodge Corporation.

■ Micom-Borer of Reading has appointed a new sales executive in the City. Bill Jenkins will be responsible for sales of the entire Micom-Borer range of low, medium and high speed data communications devices. He has worked for Thorn Ericsson, where he was on the North London sales team selling PAX Systems, pocket paging devices and public address systems, and as a sales executive for Infotron.

■ Cable and Wireless UK Services has appointed Kevin Carter as general manager, marketing. He is responsible for all the company's product marketing and sales functions. Previously he was product marketing manager with STC Business Systems, where he marketed teleprinters, facsimile equipment, word processors, teletex, videotext, intelligent telephones and message switching systems. All this experience will prove invaluable, claims Cable and Wireless, at his new post, where message switching systems and associated equipment form the major part of the product range.

CONFERENCES

■ THE fifth International Conference on Boundary Elements is to be held in Hiroshima, Japan, from November 8-11. Topics covered will include numerical techniques and mathematical principles; linear/nonlinear structural mechanics; fluid flow problems; mass and heat transfer problems; geomechanics; electric/magnetic field problems; coupling of boundary element/finite element methods; stochastic systems; and industrial applications. For further information contact Conference Secretariat, Computational Mechanics Centre, Ashurst Lodge, Ashurst, Southampton SO4 2AA. Tel: (042 129) 3223.

■ CALL for papers has been issued for the second Worldwide Congress on Computer and Communications Security and Communications Security and Protection, Securicom 84, exhibition, which March 2 1984 in the New Palais des Festivals et des Congrès of Cannes, France. The main topics will be juridical problems created by the introduction of data processing; computer fraud; logical security and privacy; risk analysis and disaster recovery planning; and computer auditing. Potential contributors are invited to send five copies of their paper before August 31 1983 to Securicom 84, SEDEP, 8 rue de la Michodière, 75002 Paris, France. Tel: (1) 7424100.

DIARY

JULY 21
Unix for Managers at St Ermins Hotel, London, is designed to give an overview of Unix. Details from Bleasdale Computer Systems, 01-828 6661.

AUGUST 5, 12, 19, 26
Practical Wordprocessing is a user training course held at the Barton Grove Micro School, Warrington. Other courses in August cover wordprocessing theory and practice, electronic book-keeping, building and using an integrated system and building and using a database. Details: Training manager, Warrington 36642.

AUGUST 8-11
Practical Computer Auditing for business and systems analysts is organised by Control Data. It will take place at Control Data Institute, London. Cost is £445. Details from Sylvia Lyons, 01-240 3400.

AUGUST 8-12
Introduction to Organisation and Methods is designed for those involved in administration or management who need to review current systems. It takes place at the Henry VIII Hotel, London. Course places at £510 may be booked through the course registrar, Cherry Bigmore, on 01-261 9237.

AUGUST 16
Data Communications Overview at the Control Data Institute, London, gives an introduction to modern communications systems. Organised by Control Data, it costs £145. Details from Sylvia Lyons, 01-240 3400.

AUGUST 30-SEPTEMBER 2
The second International Conference on Database, organised by the British Computer Society and universities of Aberdeen and Cambridge, takes place at Churchill College, Cambridge. Details: Peter Hammersley, Middlesex Polytechnic, London N11 2NQ.

SEPTEMBER 5-8
IBM cobol Review, a course organised by Altergo Education, takes place in London. Aimed at inexperienced Cobol programmers, it costs £450. Details: Altergo Education, 01-836 9303.

SEPTEMBER 12-15
Advanced IBM Cobol is an Altergo course for programmers with at least 12 months' Cobol Experience. To be held in London, it costs £450. Details: Altergo Education, 01-836 9303.

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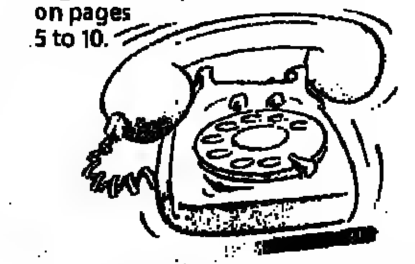

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BOOKS

Second silicon revolution will aid third world

The Wealth of Information. Tom Stonier. Thames/Methuen (1983). £4.95.

JUST as J. K. Galbraith's The Affluent Society defined the agenda for economic debate in the 1960s, and E. F. Schumacher's Small is Beautiful set the tone of the 1970s, so Tom Stonier's thought-provoking little book may well turn out to be a seminal work of the 1980s.

In short, it is a minor classic, though Stonier is not in the same league as his heroes, Adam Smith and John Maynard Keynes.

His main thesis is simple: information adds value. The accumulation of information is as important today as the accumulation of capital, and becoming more so. Knowledge can convert deserts into fertile cropland.

Even machinery is more than just muscle-power in metal. Each machine embodies within itself an intellectual history of invention and discovery. And of course one machine stands pre-eminent in the information economy – the computer.

As the necessity for physical labour continues to decline, we are fast becoming a nation of programmers and information technologists.

More interesting is Stonier's forecast of a second silicon revolution – based on the photo-voltaic cell (close cousin of the transistor) which promises cheap, clean solar energy for the Third World.

Most of the world's poorer countries are blessed with abundant sunlight, and their economies would be transformed by such an energy source.

From megabytes to megawatts! Silicon, one of the commonest elements on earth, is more precious than gold; and the alchemical ingredient that turns sand into riches is knowledge. Once we recognise the value of knowledge, we will have to re-write economics, for as Stonier says: "Information is a resource which can be truly shared."

When I tell you something, I do not thereby diminish my own store of information. Indeed, most find that the attempt to impart information often enriches the teller's knowledge.

Thus while competition is the norm for land, material goods etc, co-operation is, or should be, the normal mode of information exchange. As we move into an age where information technology supplants manufacturing as the dominant source of wealth there are grounds for hope that this fact may rescue mankind from the excesses of competitiveness.

We have just witnessed an election campaign full of calls for Victorian values and other outdated remedies. Our leading politicians display a poverty of ignorance about the wealth of information. The publishers of this book should send a free copy to every member of the new Cabinet – and lock them up until they have read it.

Richard Forsyth

No longer any cause to dread the arrival of the school's first micro.

How to organise children for the school's first micro

Micros in Early Education. Pamela Fiddy & David Wharry. Longman. £2.25.

JUST what I've been waiting for – a guide to using micros in the classroom. As a teacher with no knowledge of computers, and faced with the prospect of using one in my classroom in the near future, I found this book informative and, more importantly, extremely encouraging.

The authors set out to tell the timorous beginner how to organise the classroom and children, about the different purposes a micro can serve, and how to make good educational use of electronic toys.

This is achieved using admirably plain language. The jargon so beloved of those in the know is explained in a clear and precise manner so that even I would feel confident to use terms such as hands-on experience and bit pad.

Plenty of ideas for the development of systems are suggested, and the appendices form a comprehensive list of further sources of information.

The photographs are useful in assisting the novice to identify pieces of equipment and in showing what selected programs look like on the VDU. I was not so impressed with the cartoon-style illustrations however.

In the first chapter we see the enthusiastic wild-eyed woman teacher using a micro with a class of children, but by the time we reach chapter three who is shown writing the programs and doing the technical things? A man of course.

Microcomputers in Early Education is a practical and basic guide for the complete beginner. After reading it, I actually began to look forward to the delivery of our micro, rather than dreading it.

Christine Penfold

Should Basic be quietly lost?

Computer Languages and Their Uses. Gary Marshall. Granada Publishing. £5.95.

ONCE a computer language is established for a particular application or type of machine, that amount of flak from the purists seems capable of dislodging it.

Fortran and Cobol have both come in for ridicule from the purists, yet one remains the language of the scientific community, and the other is actually increasing its hold over commercial data processing.

Marshall's book is a gentle, thorough demolition job on Basic. He begins with the alternatives for small micros, such as Pascal, Comal and Forth, which are better structured; or Prolog and Lisp which are more suitable for particular applications.

Marshall then develops his programs, and gives alternative versions in other languages for the same application. Each chapter concludes with reasons for preferring languages other than Basic. With database programming his preference is Prolog; for real-time simulation, Comal; while for graphics, it is Lisp.

For three dimensional graphics Marshall exhorts something that is not really a language at all, the result of Fortran programs known as Gino-F, which give a standard way of drawing graphs, independent of the hardware.

He admits that sophisticated graphs can be drawn with Basic using commands added by manufacturers to the language. But software to draw these graphs cannot be run on other micros with different graphics commands.

Fair point. But not all micros run Fortran, so Gino-F is not that portable either.

I finished this book with quite a favourable impression of Basic. Marshall had unwittingly demonstrated how versatile the language is, capable of use for almost any application. Some of the other languages used are more limited in scope.

He also shows that while Pascal is a much better language for writing structured programs that follow a natural design, the job can be done in Basic. And to do it you need to know what you are doing.

So while Basic is the easiest language to learn, it is harder for most to use well. By Marshall's own argument, that is not altogether a bad thing.

The book is worth reading in its own right as an introduction to the sort of software that can be written for personal computers.

The reader will certainly come away with a solid knowledge of Basic and will brush with most of the other languages commonly encountered on micros.

Philip Hu[illegible]

Computer lift-off for the beginner

Computers Today. Donald H. Sanders. McGraw-Hill. £19.95.

THERE is always a need for comprehensive, up-to-date and easy-to-digest guides to the whole computer world.

The demand is from businessmen wanting to learn about computers, from computer industry trainees, and from experienced analyst/programmers specialising in one system or one language who want an overview of their industry.

All these categories are catered for in Sanders' remarkably unstodgy 669-page guide. The book works because the lavish use of colour, lucid diagrams and careful layout provide maximum visual impact.

Sanders has written this to be a textbook for computer literacy, so that when the reader has finished he will understand the principles of what computers are, what they do, how they work and their social impact.

Two areas in particular are dealt with particularly well, with clear illustrations. One is what happens inside a CPU, and how data is accessed and stored. The other is a lengthy section on programming and operating systems.

The book uses up a lot of space by publishing at the end of every chapter a lengthy review of what has been learnt. This is drummed into the reader through quizzers and crosswords.

There is only sketchy information about the role of minicomputers, one of the most exciting parts of the industry. The topics of robots and CAD/CAM were not well handled and, surprisingly, ergonomics is not mentioned.

However, a comprehensive synthesis which is not weak in parts is rarely found. This one succeeds in its aim, to provide lift-off and familiarity with the whole spectrum of computers.

John Riley

So much good sense!

Controlling Software Projects. Tom de Marco. Yourdon Press. £17.

OF course your project is under control! As a team leader or project manager you would not allow your system to get in a mess.

Slippage is not your vocabulary. Others may lack your magic touch but any project you take on will be implemented on time, to cost and require no debugging.

Real project leaders often find this confidence evaporating as end dates loom nearer. If this applies to you de Marco's book is one of the most important you will ever come across.

Every project leader should read it before he starts estimating and controlling projects. Not an onerous task as the book is interesting, amusing and absorbing.

Having carried out several years' research into the management of software development this reviewer was delighted to find so much good sense in one volume.

De Marco does not supply estimates or measures, but gives you the means to develop your own. They will specifically reflect your circumstances. In the future the measures proposed may form the basis of industry-wide estimating guides.

At the moment software development methods differ widely so that standardised measures are impracticable. Automobile engineering would have been at a similar stage early this century.

The book should also be read by senior management. Small organisational changes are proposed which could revolutionise software development. The main motivational problems in computer projects are accurately identified and solutions proposed. It is quite likely that, if carefully introduced, the changes could significantly reduce turnover and indirectly help with the much mooted shortage of computer staff.

Any project leader who is open to good advice and who recognises his own problems should read this book. And companies should supply it to all their project leaders.

W. Scott-Jack[illegible]

Make a date for the UK's premier computer trade event

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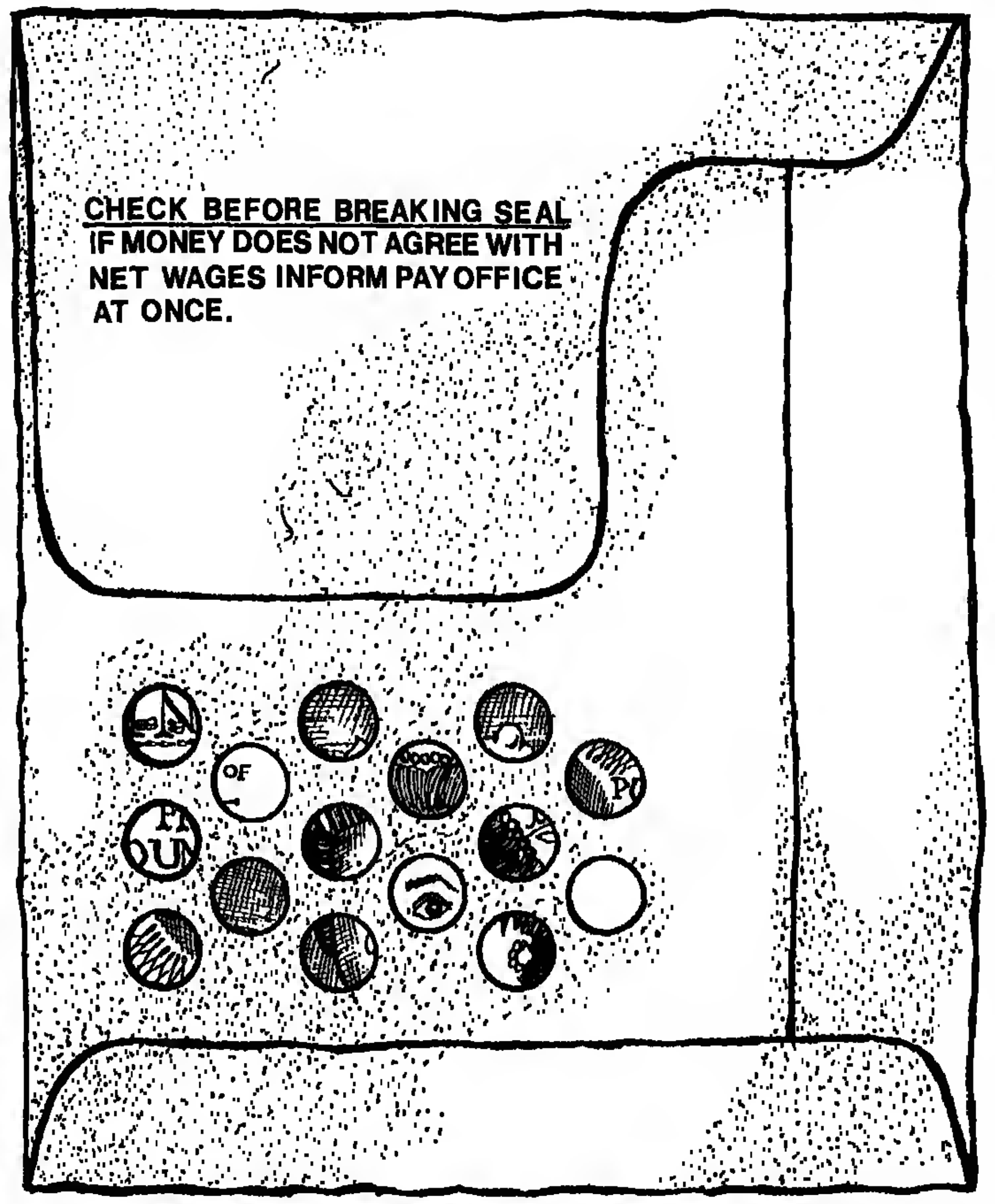
SOFTWARE MONTH

Why payroll packages are now worth a packet of money

Money is the software subject this month: or, more precisely, payroll packages. On this page we look at why payroll packages are popular, examine how that popularity boosted one software house on page 18; and look at statutory sick pay on page 19.



PAYROLL was one of the first commercial applications to be computerised, and has always been one of the most popular of packaged products.

There are many reasons for this. In the first place, payroll requirements are very well defined in a way that lends itself to the batch capabilities of the early computers.

In the second place, a major reason for the predominance of packaged payroll is one of corporate disinterest. It is, to say the least, non-profit making. Indeed, it is simply one of those necessary evils that must be tolerated gracefully.

Even where a company has an established and proficient software department, the tendency is to employ it in projects that provide a return on investment.

> **No other application changes so consistently from so many sources: government intervention, company/corporate policy intervention, DHSS/Inland Revenue and union intervention, new bank requirements, and so on.**

Thirdly, payroll makes heavy demands upon system maintenance. Although many companies start by writing their own in-house system (because it is fairly simple), they eventually buy or rent a package (because maintaining the system is lengthy, expensive, and simply boring!).

No other application changes so consistently from so many sources: government intervention, company/corporate policy intervention, DHSS/Inland Revenue and union intervention, new bank requirements and so on.

And to compound such matters, all these amendements are usually geared around one particular month of the year. Asked what were his major problems, one local government finance/DP manager replied simply: "April".

Finally, payroll is a popular package by virtue of a sound marketing policy on the part of the vendors. Not only is it something that every company with more than just a few employees must have, it falls within the jurisdiction of the man with the company purse strings; the finance director.

There is no person better suited than he to justify company expenditure. As a result, nearly all the early software houses looked towards payroll and other matters financial for their first packaged offerings.

Given this demand for third party software, a three cornered fight has developed amongst the vendors: mainframe and minicomputer packages, bureau systems, and, more recently, microcomputer packages.

One of the strongest arguments for using a bureau is that of confidentiality. Many companies place great store on paying their employees according to their worth rather than within the rigid pay scales of length of service and predefined hierarchical grades.

For this to work, there is usually a strict company policy, sometimes written into the contract of employment, that excludes interpersonnel discussion about pay levels. This becomes anomalous if the payroll department knows what everybody else is paid. The answer, of course, is to use off-site bureaux.

In many ways, however, the boom days of the bureaux have passed. In-house computers are becoming more the norm than the exception that is necessary to support a bureau superstructure. Recognising this, a number of the forward-thinking bureaux have converted into software houses, now selling the packages for which they formerly sold time. Peterborough Software is one example that has taken this route, as are Staveley Computing and Comshare.

Hoards Computing developed a payroll system originally for the shipping line T. & J. Harrison, and has since used it extensively on its own timesharing and batch bureau services.

"In addition," claims director Tim Boreham, "it is used by other DEC OEMs and systems houses who wish to provide their customers with a tried and tested payroll system."

It is interesting to note that most of these companies seem to be avoiding micro software. Indeed, a representative of Comshare, a company that went into micro software in a big way with its PlannerCalc financial modeller, pointed out that despite the vast numbers of micro packages sold, mainframe packages still remain the largest source of revenue.

Nevertheless, the impact of the microcomputer will surely be felt sooner or later. One interesting new approach is that of CMG (Computer Management Group). Earlier this year the company launched its Statutory Sick Pay (SSP) system based on the Televideo microcomputer and linked into CMG's central bureau mainframe computer. It is also available for outright purchase as a package to run on most micros with CP/M.

In the short term, the question must be asked: will the microcomputer, with megabyte main storage, 30 megabyte Winchester backing, and 16- and 32-bit processors impact on the mini/mainframe market?

Some large systems software suppliers suggest, on the contrary, that the micro is incapable of handling payroll in any meaningful manner. Tim Southern, managing director of PPL-Cyborg Ltd, holds this latter view. "Most of our clients have payrolls in excess of 2,000 employees, and existing microcomputer systems are just not fast enough to handle volumes of this size within the production time available.

"On weekly payrolls, for example, output has to be turned round between Monday and Wednesday morning of the same week. Taking an eight hour day, micros cannot process fast enough.

"Furthermore," he continued, "larger organisations need to integrate payroll into their corporate accounting routines, with the result that they have to interface into bigger mini and mainframe systems. What I do see happening, however, is increased use of micros as intelligent terminals, linked into mainframes. But there is no doubt that mainframe solutions must continue."

> **"Larger organisations need to integrate payroll into their corporate accounting routines, with the result that they have to interface into bigger mini and mainframe systems"**

Chris Harrison, managing director of CMG, agrees that the use of micros as intelligent terminals will undoubtedly grow. In this way, he sees the micro as adding to the scope and flexibility of mainframe applications.

"The CMG MicroSSP System handles SSP administration locally, but also gives the option of transmitting relevant information via telephone link to a central mainframe.

"This combination of local processing with the large storage and power of central mainframes through a bureau service is of particular relevance to the user who wants continued customer support rather than just hardware and software."

The concept of using the flexibility of local microprocessors to enhance a central mainframe is one enthusiastically adopted by Mitrefinch Ltd, with its adaptation and distribution of TMS. TMS is a time and attendance management system that consists of a central controller connected to time clocks.

Employees register attendance in the normal manner with either a traditional clock card or a credit-card sized plastic badge. This information is then captured by the system.

Peter Curran, managing director of Mitrefinch, continued: "TMS then accumulates hours worked, calculates gross pay, including overtime, premium and bonus payments the employee can clock on at any time of the day, and the system handles any attendance pattern including shifts and flexi-time.

"These results can then be fed automatically to another computer, or internally to the payroll program within TMS for final pay processing.

"We foresee," he went on, "a greater integration of payroll with other company control systems. TMS establishes the real time link between individual personnel behaviour and pay reward, giving management a facility to differentiate between individual performance, and enabling efficient workforce deployment. It is a significant step towards the automated office."

But the power and stand alone capabilities of the microcomputer continue to expand. Three suppliers which do not accept that the new generation of such micros are incapable of providing valid payroll systems in their own right included Systime, Computer House and MPSL.

Systime is currently developing a new payroll and SSP package specifically for its S-Series microcomputer as well as the PDP 11 range of DEC minis. Derek Cutforth, product development manager, explained: "In developing the system we have aimed to give payroll users the facilities of a large mainframe package on a micro/minicomputer at standard package prices.

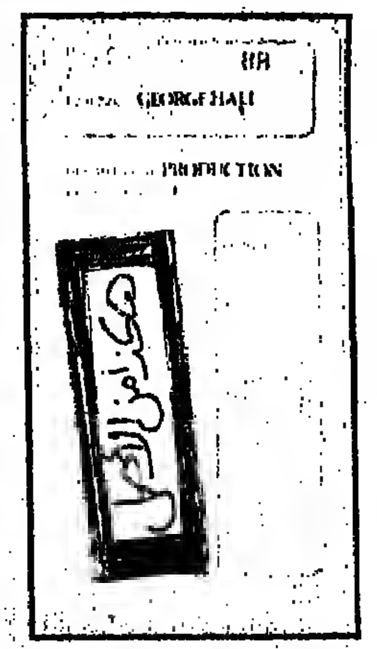
> **Three suppliers do not accept that the new generation of micros are incapable of providing valid payroll systems in their own right**

"It is highly parameterised to allow individual users their own choice of implementation. During development we have maintained close contacts with both existing payroll users and the DHSS, for the SSP requirements."

CPay, written by Computer House (Turnkey), is one of the first payroll packages to be written in C specifically for Unix systems. One distributor, Tetra, markets the product under the name of TetraPay on the impressive new Fortune 32:16 micro.

BOS Payroll comes from MicroProducts Software Ltd, and runs under the BOS operating system that has been implemented on more than 60 different computers, ranging from the PDP 11 to the Apple II. One of the more recent implementations has been on the new Sage microcomputer distributed in this country by TDI in Bristol. Sage uses the impressive Motorola 68000 32-bit microprocessor, and has been timed at 12 times the speed of the Apple II.

Perhaps that is why Apple's new Lisa microcomputer has the 68000?



SOFTWARE MONTH

One software house claims to calculate 20% of UK pay packets. If the claim is true, Peterborough Software rules the payroll package market

Payroll has paid off for Peterborough

Payroll is part of o lorger applicotion: human resource management.

PETERBOROUGH Software claims to be tho supplier of the software that calculates the pay packets of 20% of the working population of the UK.

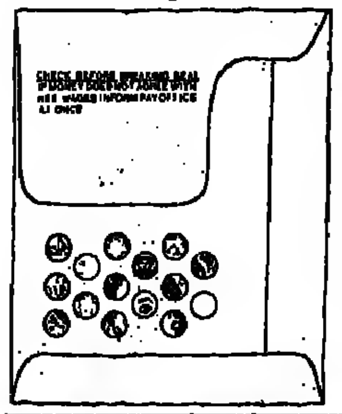
This is a phenomenal auccess when considered with the findings of s recent independently conducted survey among *The Times* Top 100 companies. This indicated that the mujority of companies actually use in-house software.

It means, if corroborated, that Peterborough completely dominates tho packaged payroll market.

John Mills, the managing director and driving force behind Peterborough Software, is happy to substsntiate tho claim.

"We have," he says, "a more up to date database of IBM mainframe installations than even tho *Computer Users' Yearbook*. We know what company has which hardware; and perhaps more to the point, who uses what software. We are thus able to plan our sales targets to a fine degree of aceuracy."

It is this attention to detail that has taken the company from a bureau without its own computer in 1963 tn an internstional software house with a UK staff of about 180 and ambitious foreign plans, in juat 20 years.



And the company haa done this mainly on the strength of its payroll package, Unipay, and the associated Unipension and Unipersonnel packages.

It is not often that an indepeodent company can be as auccessful on the strength of such a narrow product range as Peterborough clearly has been, and this is perhsps a reflection of tho unique nature of payroll software. "It is simply a draio on resources," saya Milla.

"But it is slso an emotive and highly political thing. It's ooo-profit making, but you must nevertheless do it right — because if it goes wrong, it could well lead to a atrikel"

Mills believes the current sueeess of Peterborough is rooted deep in its past. As a bureau, it had discovered that a number of companies were interested in payroll software. So when the company turned software house, the package it first produced was Unipay.

However, unlike many otber packages that are really developed for a single eustomer and theo generalised for the market, Unipay was desigued around basic concepts from the start, in a modular fashion that would provide a package as near as possible ahle to provide all tho requiremeots of all users.

"These basic concepts have stood the test of time," claims Mills. "They are fundamentslly, although changed to reflective legislative changes, the same today as they were 15 years ago.

"What is more, payroll principles are remarkably international. All governmonts want to find the best method of taking money from the people; and PAYE is one of the best methods devised. It is a basic system used in a lot of different countries."

Novertheless, trade was slow io the first few years. Packaged software had developed a bad reputation: it was something that gave three months support and then left the user to his own devices.

But then, as always in the history of hardware and software, IBM took a decisive step and unbundled its software in 1971. At around the same time, the UK's coinage converted to the decimal system, and for a while things improved for payroll vendors.

But another lull io software sales set in and threatened many of the leading companies: SPL and CAP, for example, virtually halved their staff levels overnight.

Software, and particularly mainframo software, is a labour-intensive iodustry with low-turnover, higb-cost products. This type of industry is particularly susceptihle to cashflow problems: a few sales the wrong side of the break-even level is the difference between expansion and contraction.

Mills looked at the problem and decided to try rental. "It has nothing new," he said. "The ground rules had already been laid by IBM's rental agreemonta. It allowed DP managers to got more software on the same budgots.

MILLS . . . "It is an emotive and highly political thing."

"Most DP managers had, and still have, unlimited revenue, but very limited capital budgets."

It's a variation oo the old story of boing oble to hire a mainframe but not buy a microl

But thero are other considerations of oqual importance. "People who ouy software do so because they don't wish to support it. Payroll bas tho highest maintenance load of any software other than perhaps operating systems. There are usually four or five legislativo changes each year — and they all eentre around April. Statutory Sick Pay (SSP), for example, is ono such ehange that everybody underestimated. With a predictable rental cashflow, Peterborough is able tu provide a highly stable suftware support service."

The result was a very difficult first few years. Rental is, after all, a method of financing the buyer. But once the first years had been survived, a stable and predictable income cnabled Mills to plan for the future.

This future revolved around the growing realisation in the UK and North America during the 70s that payroll is really only a part of a larger application: human resource management, comprising payroll, personnel and pensions. It became the vogue to talk of the global corporate databaso within which human resource management would figure prominently.

In 1974, Peterborough began a collaborative exercise with the British Shoe Corporation, Shell International and several other companies to design a personnel system.

The result, in part, was the realisation of a number of conceptual differences between payroll and personnel administration. "A combined payroll and personnel system is really pie in the sky — it has never yet been attained!" says Mills.

The reasons are numerous, but include the way in which the data needs to be stored: "In payroll, only the master file needs be concerned with personnel; personnel has that plua a corporate file of organisation, budgets and so on. Furthermore, there are no rules in personnel software, while payroll has many: company rules, revenue rules, DHSS rules, bank requirements and so on."

All of this is exacerbated by the physical structure of the two company organisations. "Personnel is a career position; payroll is not. The personnel manager will often sit on the board and influence company decisioos; the payroll manager is under the finance manager and does neither."

Nevertheless, the two systems are both concerned with people

■ Continued on page 19

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Guildford (0483) 35557

SOFTWARE MONTH

When sickness can cause complication

Statutory Sick Pay (SSP) is part of the overall payroll application — but it's by no means the most trivial part, or the simplest

STATUTORY Sick Pay (SSP) is not a trivial application. Averago pay, including ovortimo and any extra paymeots mado during tho week, determines the category of sick pay. But there are many provisions, exceptions and exclusioos.

Night working may require tho records to be divided over two separato days; pregnancy is excluded; previous claims within tho last 56 days, strikers and those held in police custody must be taken into coosideration.

In fact, tho wbole process is so complicated that there aro innumerablo claims, couoterclaims and refutations from tho different software suppliers (oach one of which is tho only company to have got it right ao farl).

But if you, tho user, get it wroog, it could lead to an immediate fino of £200 plus £20 a day for failing to keep accurato recorda — or a fino of £1,000 or a term of imprisonmoot or both, depending upon which supplier'a claims you are currently readingl

SSP is clearly a part of the overall applicatioo of payroll, and with the current vogue for integration should therefore be an integral part of any payroll applications package. But Computer House has estimated that tho real cost of modifying an in-bouse Cobol payroll system can boup to £15,000.

And Somaphoro Computer Systems of Godalming, Surrey, has estimated that it will at any rate prove impossible to adapt up to 90% of all existing payroll applicatioos to meet the new requirements.

This is perhaps the Semaphore and many other small systems houses have solved the problem by produeing free standing SSP systema, which, incidentally, includes a aystem from one company that costs less than £100 and runs on the Spectrum home computer. (One wonders how many peoplo a company can afford to employ if it can only afford a Spectrum to run its business aystemsl)

CMG, however, is one company determined not to fall into the trap of underestimating tho task. "While many employors," it claims, "and tho computer industry and computer departments in general have totally underestimated the difficulties of implementing for SSP legislation, CMG has studied the complexities and doveloped methods for SSP adminiatration apecifically designed to: cover the inter-relationship between SSP and occupational sick pay schemes; provide a means of absence control (essential because of the "self-certification" rules of SSP); and overcome the limitationa imposed by any conventional microcomputer solutions that might be offered."

To do this, CMG has elaimed an investment of more than £250,000 in project development — somewhat more than the £15,000 estimated by Computor Housel

Peterborough Software is another company that has treated the subjoet with roassuring seriousness. Managing director John Mills explained: "SSP is a complex piece of legislation operating in a very small area. Most usors do not undorstand it: it's quite possible that a number of the packages have also got it wrong. Peterborough (in common with most of the major suppliers) has spent several months in discussion with the DHSS for its guidelines and rulings on how the Act should be interpreted.

"We think we've got it right now, but it's still possible that changes will bo necessary."

Getting it right, he discloaed, has involved aubstaotial oew coding. "The SSP part of Unipay is 75% as big ss tbe original program; thst is, 90,000 lines of Assembler." At even a conservative estimate, this represents something like 15 man years of effort.

One wooders just how many other companies would have the resources to concentrate 15 man years into juat a fow mooths.

The only thing that is certain about SSP is that we haven't heard the last of it yetl

Peterborough profits

■ Continued from page 18

and should thereforo run in tandem. This was the approach adopted by Peterborough. By 1976, Peterborough had two parts of the human resource trio — Unipay and Unipersonnel — two separate products that could act as one with shared data.

The third, Unipension, soon followed in response to tho 1975 Social Security Pensions Act.

By 1981, all Peterborough softwaro was revamped to provide both online aod interactive facilities, hut retaining tho option for batch processing if required.

For tho future, Mills now sees total integration across tho manpower systems. "Not the lip service we currently have. It will be a full database system with English language enquiry facilities and better reporting. The all-singing corporate database is not and never will be feasible; but we see the world as a series of databases, one of which is a people database; payroll, pensions and personnel.

"Since all three departments keep the same records, up to 40% staff savinga can be achieved by integration. peterborough Software is working on the human resource database. This is the way it must be done in the future: and this is the way it will be done — an interactive enquiry based database for human resource management."

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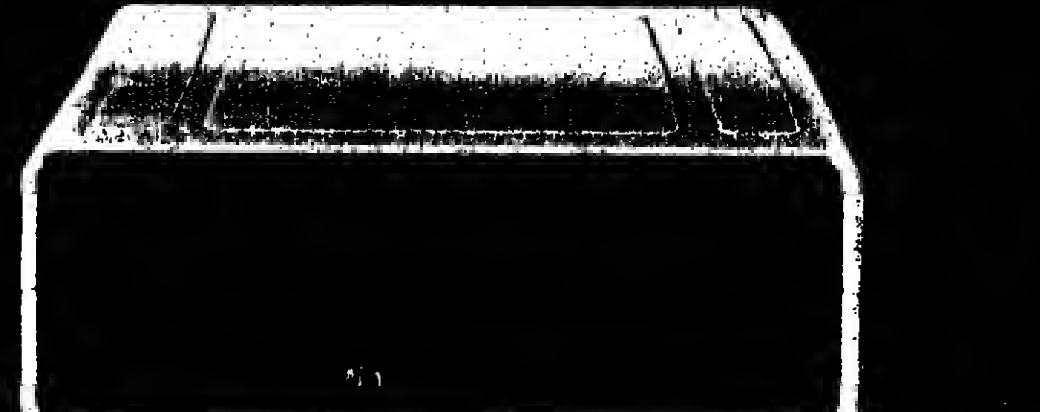

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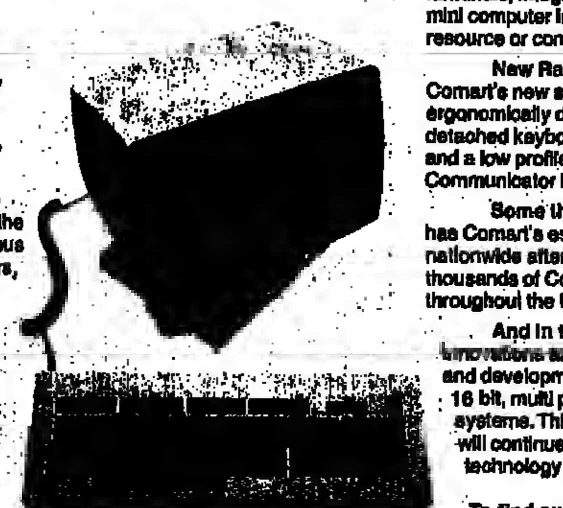

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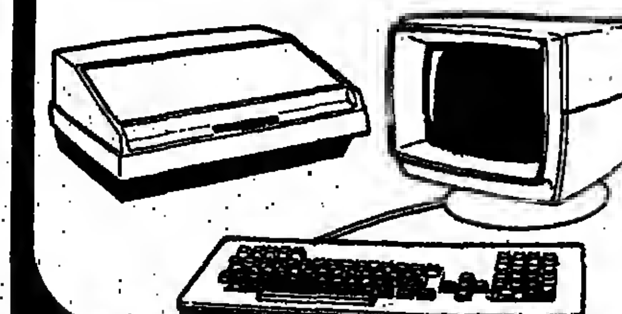

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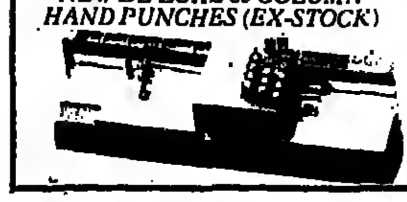

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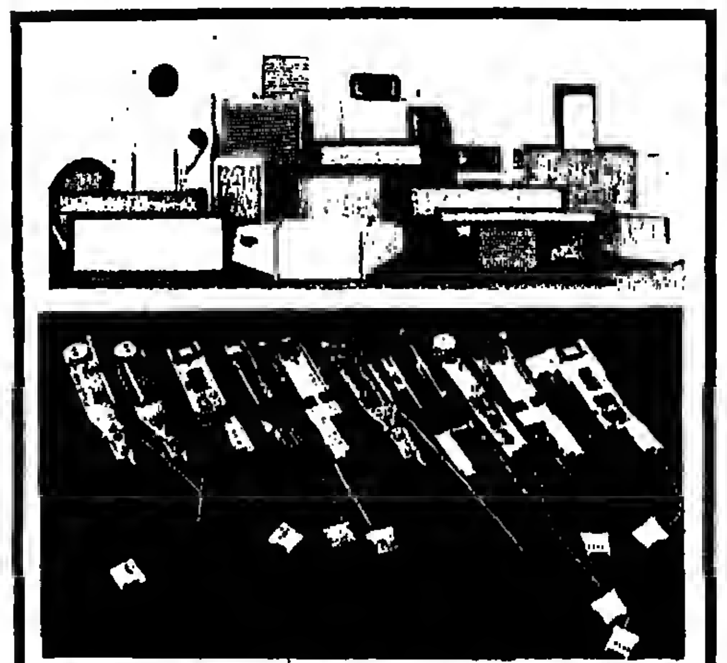

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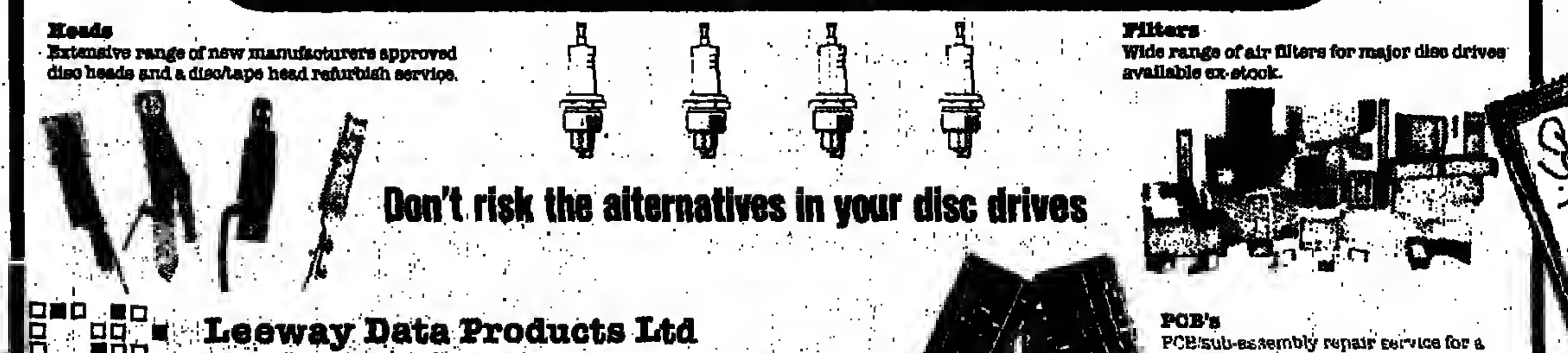

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For further information and an early interview contact Knight on 01-491 4706 quoting REF RC314.

James Burrough
public limited company

Dealer Managers

Locations: London, Birmingham, Manchester
Realistic Earning: £15,000 + Ford Sierra

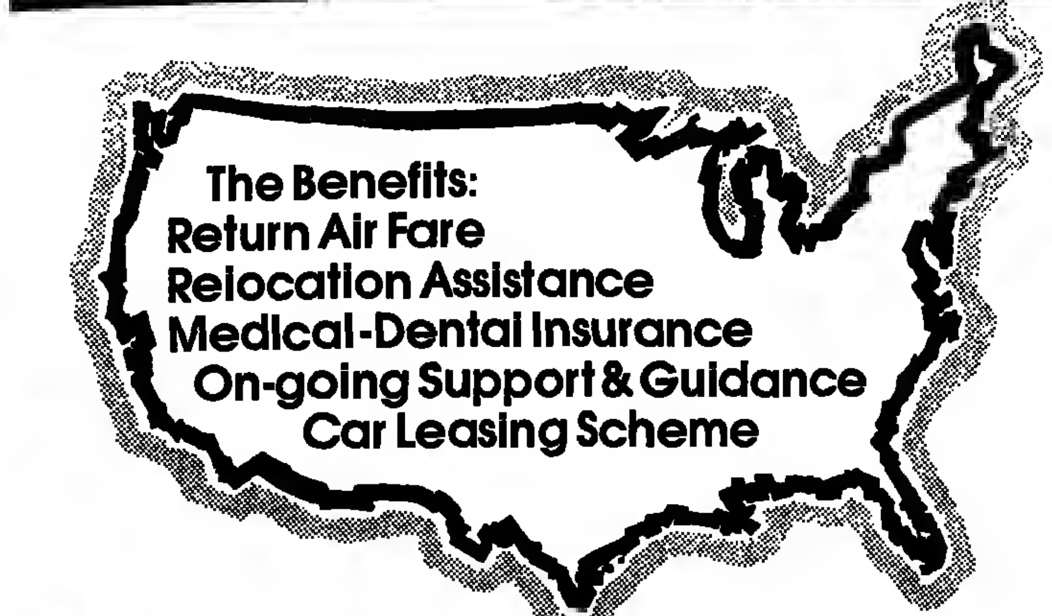
C.K. Computers Limited is a young and fast growing company dedicated to the marketing of small business systems and peripherals.
Their recent success as main distributors for two exciting new products in the U.K. has led to the expansion of their operation, to include representation in London, Birmingham and Manchester.
The Dealer Managers will have total responsibility for selling a comprehensive range of hardware, software and ancillaries to both dealers and customers.
You will have a successful track record of selling micro computers which should include some experience in Dealer Management.
Although reporting to the U.K. Sales Manager, you will be given the scope to manage your own client base and therefore you must demonstrate a high degree of initiative and drive.
You will be offered a negotiable basic salary plus a realistic commission scheme and a company car.
Find out more – contact Knight on 01-491 4706 quoting REF YY151.

CK Computers Limited

Knight Computer Services Limited
(Recruitment Division)
14 Old Park Lane, London W1Y 4NL.
A member of the Computing Services Association
Licensed as an Employment Agency

01-491 4706
24 Hours

HUNTERSKIL
The Hunterskil Group



America – find out the reality

In conjunction with Personnel Associates Inc (a very successful New Jersey-based recruiting and consulting organisation) Hunterskil International has intensely researched the American market, on behalf of you – the British EDP professional. Consequently, we have produced a guide (see below) which describes living and working in the USA.

The USA offers, on average, twice the UK salary rates – and the cost of living is very similar. Additionally, income tax rates are lower and the resulting larger disposable income guarantees a better life style.

Recreationally, America is unsurpassable. Whatever your cultural, sporting or spare-time interest, you will find your ideal. This is especially so in and around New York where boating, swimming, skiing, beautiful countryside, sporting events, theatre, museums, art and good restaurants abound – and the sunny Caribbean is only an inexpensive 2-hour flight away.

Rental accommodation is readily available, better equipped and moderately priced. Commuter transportation is extensive around New York and cars can be obtained at much lower prices (or rents) than in the UK. Petrol currently costs around $1.15 per gallon.

A number of diverse and very successful American companies have asked us to recruit for the following positions. You have the option, in many cases, of working permanently, on a contract basis, or convert from contract to permanent status after an initial exploratory period.

A university education is preferred, but not essential, and we would like to hear from you even if your experience does not match that shown. Over the coming months, we will be advertising extensively on behalf of organisations across the USA.

A free guide to working in the USA

INCLUDES:
* Cost of Living * Schools
* Taxes * Recreation
* Salaries * Visas * Transport

The Hunterskil Group HUNTERSKIL

HUNTERSKIL

Hunterskil International Limited

NEW JERSEY – NEW YORK – FLORIDA

SOFTWARE/TELECOMMUNICATIONS — $30000-$50000

Systems Programmers Network Specialists Support Generalists

A good grounding in systems/software programming (minimum 18 months) gained in an IBM mainframe environment will qualify you for these positions, especially if you have experience of one of the following:
* IMS * IDMS * CICS * OS/MVS * DOS/VSE * VM/CMS * Systems Generation * RAMIS/FOCUS * VTAM/TCAM * X25 * NCP/ACF * VTAM/VSAM * SNA * Performance Tuning

IMS or IDMS (IBM & ICL) — $25000-$50000

Programmers Programmer/Analysts Analysts

Opportunities are available within the banking, telecommunications and consulting industries for database professionals with at least 3 years' data processing experience.
A good appreciation of IMS or IDMS assures successful candidates a rewarding and long-term future with their American employer.
Analysts and Designers with IDMS experience gained on ICL equipment will be able to migrate to an IBM environment with certain of our clients.

PL/1 &/or COBOL &/or BAL — $22000-$40000

Programmers Programmer/Analysts

Just 2 years' experience in any of the above languages will enable many programmers contemplating their first job change to make that move to any one of numerous companies within many different industries.
Either OS/MVS or DOS/VSE knowledge is acceptable and CICS experience would be an asset, although many firms will supply training in this and other state-of-the-art software products.

NEW JERSEY – NEW YORK CITY

UNIX & 'C' (Any Machine) — $25000-$50000

Programmers Analyst/Programmers Instructors

Our client, the world's largest communications organisation, seeks a number of professionals to play a major part in developing several large, complex and technically-advanced projects at several sites in the NE USA.
Ideally, you should have at least one year's UNIX experience (any machine) gained in either software or applications development.
Candidates with some UNIX knowledge coupled to in-depth experience on minicomputers using languages such as ALGOL, PASCAL or ASSEMBLY will also be considered.

FLORIDA NEW JERSEY USA-TRAVEL

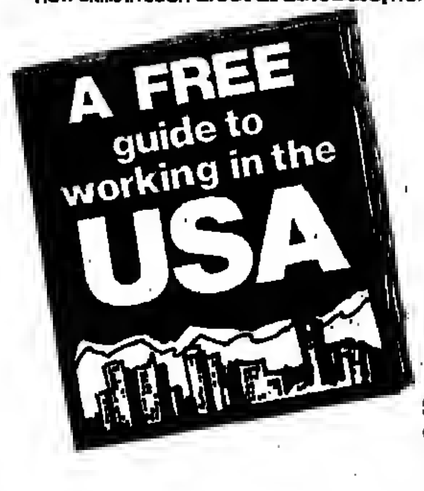
CAPACITY/PERFORMANCE PLANNING HARDWARE EVALUATION — $40000-$60000

Several organisations including technical consultancies, international companies and nationwide bureaus are seeking a number of senior professionals in this specialist and growing field.
A high level of communications skills (oral & written), analytical ability and an IBM systems software background are required plus experience in one or more of the following:
* Hardware Evaluation/Capacity Planning * Performance Management * Long & Short-term Hardware Planning

NEW YORK CITY – NEW JERSEY

BUSINESS ANALYSTS SYSTEMS ANALYSTS — $27000-$43000

We would like to hear from applicants with at least 2 years' full feasibility-to-implementation systems experience backed up with a technical knowledge gained within an IBM mainframe environment.
Good interpersonal skills plus an in-depth appreciation of a particular industrial or business applications area such as banking, insurance, telecommunications or manufacturing would ensure your success in a number of areas.
Many positions can, or will, lead to project management responsibilities and/or the opportunity to learn new skills in such areas as database, networking or teleprocessing.



H PROGRAMMING & SYSTEMS LTD
(02403) 22201
THE BETTER WAY

Obtain your free Guide now...

Send your CV, post the coupon or telephone for an application form

Tel (02403) 22201

HUNTERSKIL INTERNATIONAL LIMITED
Plymouth House, 7 London Road,
Amersham, Bucks HP7 0HE.

Please send me an introductory booklet on America.
NAME ____
ADDRESS ____
____
Home Tel ____
Work Tel: ____ Ext ____

I have experience in the following:
UNIX/C ☐ IMS ☐ IDMS ☐
COBOL ☐ PL/1 ☐ BAL ☐
SNA ☐ ACF ☐ CICS ☐
OS/MVS ☐ DOS (VS/E) ☐ NCP ☐
NCR ☐ MINI Assembler ☐ Tandem ☐
Telecoms ☐
I have performed duties as: Systems Prog ☐
Apps Prog ☐ Business/Systems Analyst ☐
Position required: ____

SENIOR APPOINTMENTS – £14K +

MSA
The Software Company

SYSTEMS CONSULTANTS

MAIDENHEAD, BERKSHIRE — TO £14,500+CAR

Here is your opportunity to join MSA Limited, the world's leading independent supplier of packaged application software.

Quality products and first class customer support are two of the ingredients which have led to MSA's excellent growth rate and professional reputation.

Their continuing success has led to the need for more Systems Consultants to provide customer support in the areas of GENERAL LEDGER and ACCOUNTS PAYABLE.

You'll need to be highly professional with good communication skills, an analytical mind and experience as a Systems Analyst in the above application areas.

Experience of working with mainframe packages is also required.

Your role will involve working with customers to ensure successful implementation and then to provide on-going support in the production environment. This necessitates advising on implementation planning, training customers and general problem solving.

These roles are seen as an exceptional opportunity to build on your systems background and acquire valuable business experience through extensive training and work involvement.

Fringe benefits are excellent and include a quality car, BUPA, bonus, share purchase scheme and excellent pension scheme.

For further information, please contact MARK IRENS quoting reference CW1407/1.

HUTTON EXECUTIVE SELECTION LTD.
31 PALACE STREET,
LONDON SW1E 5HW.

TELEPHONE: 01-630 0434 (24 HOURS)

Hutton
SPECIALIST RECRUITMENT CONSULTANTS

SALES MANAGER

32 BIT MINIS

WEST LONDON

C. £30,000+CAR (Basic C. £15,000)

COMMERCIAL NEW BUSINESS

Yes, our Clients do promote from within, when possible. The problem is when one expands at a rate that makes such decisions impractical. Under those conditions, one needs to look outside for suitable contenders.

We would prefer to talk to condidates who are already Managers or with management experience, preferably in the 32 bit mini computer market place. However, we recognise that successful Sales Executives looking for their first sales management post, may well fit the bill.

The answer is simple. If you are interested in this position and feel you have something to offer our Client, then call BOB BOWER for a discussion.

Ref. CW1407/2

Hutton
SPECIALIST RECRUITMENT CONSULTANTS

SALES EXECUTIVE

CONTINUOUS PROCESSING

BASIC TO £15,000
PLUS GUARANTEE AND CAR

LONDON BASED
MANAGEMENT POTENTIAL

The launch of a new range of computers in competition to TANDEM and CTL MOMENTUM continuous processors has enhanced our Client's already comprehensive portfolio of computer products.

A specific group has been created within the Company's structure to market this new range. Controlled by a Marketing Manager, the group now has a vacancy for a professional Sales Executive with management potential.

The ideal condidate will have experience in:

★ D.P. equipment sales.

★ Systems sales with strong communications and software content.

★ Knowledge of information services available in the U.K., particularly to financial users, e.g. Reuters, Extel, Topic, Telerate, PSS, Videotex, Teletex.

If you feel your background fits this specification and you are interested in discussing this excellent career opportunity, then telephone BOB BOWER immediately.

Ref. CW1407/3

Hutton
SPECIALIST RECRUITMENT CONSULTANTS

SENIOR SALES

CITY

DISTRIBUTED PROCESSING, OFFICE AUTOMATION, LAN's

BANKING/INSURANCE

£24,000 UP FRONT+CAR

Our Clients manufacture and sell a wide range of distributed data processing and local area networks to large commercial and financial organisations.

They have two important vacancies in the City for Senior Sales Executives with experience in selling to the Banking and Insurance Industries and this must include an intimate knowledge of either or both.

The first year's guaranteed income illustrates the importance of these positions and there are good management prospects in a relatively short timeframe.

Please telephone BOB BOWER for further information.

Ref. CW1407/4

Hutton
SPECIALIST RECRUITMENT CONSULTANTS

SENIOR APPOINTMENTS – £14K +

CITY OF SHEFFIELD

HEAD OF COMPUTING SERVICES
(Senior Assistant Treasurer status)
Up to £18,828

ASSISTANT HEAD OF COMPUTING SERVICES
(Information Centre)
Up to £17,550

Sheffield City Council serves the fourth largest city in the United Kingdom, employs over 30,000 staff and has an annual turnover of over £400m. The council is reviewing its computer policy and has an ambitious development plan based on an I.C.L. Duel 2988 installation and an extensive network of O.R.S. terminals and work stations.

The above two key positions recognise the importance placed by the Council in developing a long-term information systems strategy and in seeking new solutions to the information needs of user departments.

Candidates must have over five years' experience in the management of a large D.P. department and be able to demonstrate a successful track record in systems development and implementation.

Assistance towards the cost or relocation expenses together with temporary lodging allowance will be provided in appropriate cases.

Letters of application to the City Treasurer, Town Hall, Sheffield S1 1UL to arrive no later than 1st August.

It is the policy of Sheffield City Council to provide equal employment opportunities and consideration will be given to all suitably experienced and qualified applicants regardless of handicap, sex or race.

[48251

SALES EXECUTIVE

£30,000 plus car etc

We are the largest independent supplier of IBM equipment in the UK. Recently we became the first computer leasing company to obtain a full listing on the London Stock Exchange.

Over the past two years we have successfully expanded our marketing staff and we now wish to recruit three additional sales executives who will be based in our London office and will be part of separate sales teams reporting into regional managers.

We sell and lease all of IBM's large processors including the 43XX and 308X series, plus current disks, tapes and I/O equipment. We have a large existing customer base which predominently consists of major users.

Applicants will need to have already demonstrated a successful track record in selling computer systems although not necessarily IBM equipment.

If you are interested in a career with us please send a CV to:

Ashley H Mitchell
14 Welbeck Street
London
W1M 7PF

"United Leasing the IBM alternative to IBM."

FTB

High Technology Recruitment Consultant

On Target Earnings c £20,000 + Prestige Car

We have an established and excellent reputation for successful recruitment in High Technology and CAD/CAM companies. This increasingly important division in our company compliments our significant and highly respected name in the fields of Retained Executive Search, Data Processing, Accounting and Sales and Marketing Recruitment.

We urgently require an experienced Recruitment Consultant who wishes to specialise in the hi-tech market. It is essential that you are highly motivated, enjoy a demanding, fast-moving yet open environment and are willing to make a significant contribution to the development of the business.

Targets are extremely realistic for the calibre of person that we require and you will be surprised by the earnings potential. The benefits package being totally flexible.

This is a unique opportunity to expand your talents and ideas in a young, dynamic organisation.

Please contact in strictest confidence: Adrian Thorley.

Ferguson Thorley Bowles Associates Limited
International Personnel Consultants
15 Clarence Street, Staines, Middlesex TW18 4SU
Telephone: Staines (0784) 59247. Telex: 8814148

BOX NUMBERS
Box number replies should be addressed to:

Box Number .....

c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

BUSINESS SYSTEMS MANAGER

The Company
McKechnie Metals Ltd, Manufacturers of non-ferrous extrusions in Rod & Section located in Aldridge, West Midlands.

THE JOB
Raquire a Manager to be responsible for the review of all systems and in particular to identify, develop and implement a Computer based system within the company, as well as insuring the correct Hard/Software is available and auitable for aach task.

THE PERSON
Prefarrad age batween 30 and 40, with minimum of 4 years data processing experience as a Sanior Systems Analyst or project leader lavel. Will have experience of 'On-line' as well as Batch Systems. Knowledge and/or experience of ICL would be an advantage with the sbility to deal with all lavels of Managemant.

THE REWARD
Attractive Salary plus an employment package including Contributory pansion, Sick Pay, Annual bonus etc.

Those wishing to apply should do so in writing stating all relevant details to:

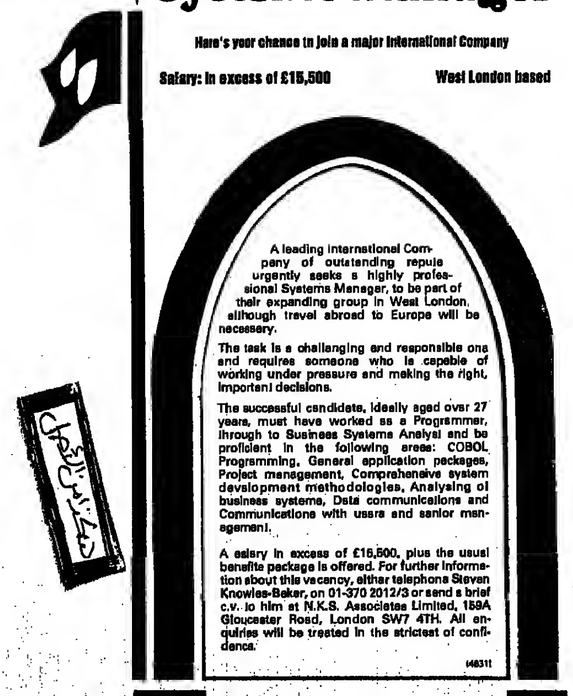
The Personnel Director,
McKechnie Metals Ltd.,
Middle More Lane,
Aldridge, Walsall,
West Midlands WS9 8DN

[46581

Systems Manager

Here's your chance to join a major International Company

Salary: In excess of £15,500 — **West London based**



A leading international Company of outstanding repute urgently seeks a highly professional Systems Manager, to be part of their expanding group in West London, although travel abroad to Europe will be necessary.

The task is a challenging and responsible one and requires someone who is capable of working under pressure and making the right, important decisions.

The successful candidate, ideally aged over 27 years, must have worked as a Programmer, through to Business Systems Analyst and be proficient in the following areas: COBOL Programming, General application packages, Project management, Comprehensive system development methodologies, Analysing of business systems, Data communications and Communications with users and senior management.

A salary in excess of £15,500, plus the usual benefits package is offered. For further information about this vacancy, either telephone Steven Knowles-Baker, on 01-370 2012/3 or send a brief c.v. to him at N.K.S. Associates Limited, 159A Gloucester Road, London SW7 4TH. All enquiries will be treated in the strictest of confidence.

[46311

The Computer Specialists... Placing Computer Specialists

OPERATORS

IBM VM/CMS OPERATORS £9,000++

★ CAREER OPPORTUNITIES
★ 22 DAYS' HOLIDAYS
★ SPORTS AND SOCIAL CLUB

Two vacancies currently exist within this leading manufacturing organisation based in London.
Our client requires ambitious, senior operations professionals with a minimum of two years' experience. Duties will include the utilisation of a large on-line system.
These positions would suit candidates willing to expand their computer knowledge as the company offers excellent career opportunities.

PDP RSTS/E OPERATOR c £8,000

★ JOB SECURITY
★ FREE LIFE ASSURANCE
★ CAREER PROSPECTS

Due to promotion this rapidly expanding site requires an enthusiastic, competent Computer Operator with a minimum of 18 months' RSTS/E experience. Excellent opportunity for career development. Benefits include free life assurance, medical insurance, luncheon vouchers and profit share scheme.

VAX VMS OPERATORS c £7,800

★ EXPANDING SITE
★ GENUINE CAREER PATH
★ EXCELLENT WORKING CONDITIONS

This rapidly expanding highly successful advertising company, are seeking to recruit enthusiastic, career minded DEC operators, with a minimum of 12 months' experience. VMS exposure not essential but would be a distinct advantage. Company offers excellent career path with excellent working conditions.

DEC/PDP/VAX OPERATORS c £8,000

We have many requirements for a selection of DEC operators for some of the fastest growing computer companies based in London and the Home Counties.

SYSTEMS & PROGRAMMING

ANALYST/PROGRAMMERS IBM PL/1 To £16,000

Our client, a well-known firm based in Central London are currently engaged in the development of major systems. They retain IBM mainframes and use CICS, DL/1 and IMS. Candidates should possess a minimum of 2½ YEARS' PL/1 experience preferably gained in an ON-LINE environment. Applicants will be involved in the development of a wide variety of large systems with user contact. Excellent prospects to Project Leader level.

★ EMPHASIS ON TRAINING
★ PROMOTION PROSPECTS
★ REWARDING CAREER

PROGRAMMER IBM COBOL To £11,000

This PRESTIGIOUS firm of Merchant Bankers in the CITY can offer an exciting career move for a programmer with a minimum of 12 MONTHS' IBM COBOL and 6 MONTHS' CICS experience. Ideal applicant should be ambitious, and looking to progress in to analysis. In return you will be offered varied financial development projects in a progressive environment.

★ SUBSIDISED MORTGAGE, PENSION AND LIFE ASSURANCE
★ INTERNATIONAL TRAVEL
★ TRAINING IN DL/1

PROGRAMMER/ANALYST IBM COBOL To £11,000

A rapidly expanding Service Company based in the City seeks a Programmer or a Programmer/Analyst with a minimum of TWO YEARS' COBOL, some of which should have been gained in an IBM environment. This is an ideal opportunity for an ambitious individual to become involved in a wide range of hardware, software and applications. Opportunities for TRAINING, career advancement and travel are excellent.

★ VERY VARIED WORK
★ USER CONTACT
★ TRAINING IN TP AND DATABASE

TRAINEES OPERATORS/PROGRAMMERS c £5,500

We require young enthusiastic candidates wishing to pursue a career within the computer industry.
If you are aged between 18-25 and have a minimum of two A-levels, please call us now to discuss your future.

PROGRAMMER ANY COBOL £9,500

An exciting opportunity to broaden your experience is offered by this international company based in the City. They retain IBM MAINFRAMES AND IBM MICROS. If you are an ambitious young programmer who seeks early responsibility, lots of training, user contact and progression into analysis, with a minimum of 12 MONTHS' COBOL, telephone now.

★ SCOPE FOR ADVANCEMENT
★ EXPANDING SITE
★ TRAINING ON IBM MAINFRAMES AND MICROS

PROGRAMMERS IBM PL/1 To £12,000

Major expansion within this progressive company within Central London has led to vacancies for all levels of Programmers. Opportunities exist within the Systems Development Teams for people with a minimum of 12 MONTHS' PL/1 experience. Our client retains IBM mainframes running under MVS using CICS, DL/1 and Jackson Structured Programming. If YOU wish to work in an ON-LINE DATABASE environment with excellent TRAINING, TELEPHONE NOW!

★ NEW DEVELOPMENT PROJECTS
★ FLEXITIME, SUBSIDISED RESTAURANT, PENSION AND LIFE ASSURANCE

ANALYST/PROGRAMMER IBM COBOL To £13,500

This well-known company based in WEST LONDON, offers fantastic opportunities for individuals with a minimum of THREE YEARS' COBOL and some DL/1 experience. The company retains IBM 4341 running under DOS/VSE using COBOL, CICS, and DL/1. If you are interested in SYSTEM DEVELOPMENT work, training in CICS and career progression telephone now.

★ PROGRESSION TO PROJECT LEADER
★ EXCITING, PROFESSIONAL ENVIRONMENT

(3691)

ABECT 242 9796
computer recruitment limited 15 Red Lion Square London WC1R 4QH. Telephone: 01-242 9796

SYSTEMS MANAGER/PROGRAMMER — BEDS — c.£8-11k+CAR
International Company situated in rural Beds, are seeking a Systems Programmer to be responsible for technical suppt functions. The candidates will have an extensive DEC, PDP background under RSTS/E using BASIC + some FORTRAN and MACRO experience.

HEALTH CARE/MUMPS SALES SUPPORT — BEDS — to £13K+CAR
Leading European Software House with offices in UK, Europe and the Middle East are seeking an A/P with experience of Health Care Systems using MUMPS on DEC Hardware. Experience of Radiology and laboratory administration is advantageous.

IBM PROGRAMMER — HERTS — £7-9k
Our client, a market leader is seeking an IBM Programmer with experience of DOS/VSE Batch and on-line work. Candidates will be part of a small team working primarily on stock control systems.

SENIOR ANALYST — N. LONDON/S. HERTS — to £15k
Successful and expanding bureau are seeking a general commercial Analyst with at least five years' solid experience of systems. Candidates will have taken at least two projects from feasibility to implementation. PRIME experience a definite advantage.

PROGRAMMER ANALYST — HERTS — c.£12k
A leading manufacturer of domestic products utilising twin 34s is seeking a programmer analyst with at least three years' RPG II systems 34 experience. Our client is currently reviewing its financial systems with a view to redevelopment.

BASIC+2 or BASIC + PROGRAMMER — HERTS/BUCKS — c.£9k
Two enterprising installations are seeking programmers with RSTS/E experience preferably with RMS. Applicants will be working on general Commercial Systems within small teams. Company progression and benefits are excellent.

RPG II/III PROJECT LEADER — MIDDX. — to £20k
A major international company is currently setting up a team to develop distribution and finance systems for its European divisions. They need a candidate with extensive GSD experience to be based in the UK with trips to mainland Europe.

IDMS DATABASE ANALYST — MIDDX. — c.£13½k
A successful construction company working mainly in the Petrochem industry has a requirement for an Analyst with a good knowledge of IDMS. They are running an IBM 4341 under MVS with TSO/SPF but will consider candidates from other hardware backgrounds.

IBM ANALYST PROGRAMMER — MIDDX. — to £11k
A multinational company manufacturing and distributing office equipment is developing order processing systems on IBM mainframes. They are seeking an A/P with about three years' experience including some COBOL on IBM to work on systems from feasibility to implementation.

ICL SENIOR PROGRAMMER — MIDDX. — c.£9k
Part of a international engineering group, this company is involved in the developing distributive systems on ICL 2900s. They require an applicant with at least two years' COBOL to be involved in systems from design to commissioning.

DEC ANALYST PROGRAMMER — MIDDX. — c.£12k
This company provides turnkey systems based on DEC hardware. Due to continued expansion, they require candidates with at least three years' experience on PDP 11s or VAX to work both in-house and on customer sites.

SENIOR CONSULTANTS IBM — MIDDX. — c.£15k+CAR
A services organisation, of a multinational having diverse interest working mainly on IBM mainframe systems needs a candidate with extensive DP experience including some IBM and accounts/ledgers experience. Must display excellent communications skills and have a desire to play a major role within the development division.

For further information contact Nick Lewis (Middx positions) or Chris Chehade (other positions)
HOWLETT COMPUTER SERVICES
FREEPOST
Leighton Buzzard
Beds LU7 7BR
Telephone 0525 382565 (3 lines) or 029 672 221 (evenings/weekends)

HOWLETT COMPUTER SERVICES

WESTBURY HOMES (HOLDINGS) LIMITED

are seeking someone, preferably between the ages of 20-25, with the following DATA GENERAL EXPERIENCE:
– at least one year of programming in business basic
– at least two years of commmercial applications programming e.g. accounting, modelling
– practical operations management under RDOS, AOS, or AOS-VS

The Westbury Homes Group is the largest privately owned firm of house builders in the U.K.
The Company operates from Cheltenham where the successful candidate will be based.
We have had an in-house computer facility for two years and are about to undertake our next phase of expansion.
The position attracts a salary of not less than £7,000 per annum. A Company car is provided.
Other benefits include a contributory pension scheme and health insurance.
Relocation expenses will be payable to the successful candidate.
Applications should be made in writing giving full details and quoting reference number CW/1 to: The Group Personnel Manager, Westbury Homes (Holdings) Ltd., Westbury House, Lansdown Road, Cheltenham, Glos. GL50 2JA. (4565)

WESTBURY
Building you value is our business.

ENGINEERS

EUROPEAN SUPPORT to £15K + usuals
Opportunities to join pacesetters in Distributed DP, Office Automation, Sync/Async Comms, Time-share and Fault-tolerant systems, Protocols, Op Systems, Software – US/Euro training. Ref: M 082.
FIELD SERVICE. Manchester, Birmingham, London and South. Career appointments – component level with a flair for software or board level with experience on recognised standard hardware + personality! Ref: M 147.
TECHNICIAN. All areas – to £9K. In-house support from Mainframes to Micros, peripherals to cable TV through analogue and processor-based electronics, test, OA, R & D etc. Ref: M 234.
WHATEVER YOUR LEVEL GET YOUR CAREER MOVING AND EXPANDING
RING MIKE HILL NOW AT
ab executive (kingston) ltd
01-549 6441 (office) — 01-394 2389 (eves etc.) (4119)

COMPUTER PROGRAMMER

An opportunity exists for an experienced RPG 11 programmer to become involved in the future development of data processing within the M.Y. Group of companies.
We are currently operating two IBM System 34's which provide a service for many of the companies within the Group – three of which are on-line.
Suitable candidates must be able to get on with people in a busy department. The successful applicant will be involved in many varied and challenging applications and be rewarded with an excellent salary reflecting the importance placed on this appointment.

MY
Please write or telephone:
Mark Paxton,
M.Y. Dart p.l.c.
Moxon Street,
Barnet, Herts, EN5 5TR
Telephone: 01 440 8441 (4656)

Want to work in
SURREY, SUSSEX HANTS, BERKS or KENT?

Experienced in
COBOL, PL/1, RPG 3, FORTRAN or C
on
IBM, ICL, HONEYWELL HEWLETT-PACKARD or PRIME or any other computer?
Programmers, Analyst/Programmers and Systems Analysts are urgently required
PHONE NOW!

AMES PERSONNEL
Please telephone for further details and an application form.
8 CHART WAY, REIGATE, SURREY, RH2 0NZ
TELEPHONE: REIGATE (07372) 22216 or 22210 (4558)

IBM OPPORTUNITIES

MVS PROGRAMMER To £10,000
Have you 18 months + IBM MVS COBOL experience? As part of a development team you will be utilising an IBM 3033 under MVS with on-line and database facilities. The firm is based in the City and offers perks including bonus and lunch allowance. REF C/2610

PL/1 – LATEST IBM KIT!! £NEG
Currently a PL/1 programmer with two years' + experience? My clients, based on the London/Middlesex borders would like to hear from you. They offer immediate team leading responsibilities and the latest chance to progress quickly, with training into analysis. The development projects are of a manufacturing nature and include sales order and accounting systems. OS/MVS expertise is preferred, training will be given in CICS and TSO if required. This is an excellent opportunity for a programmer to further his career. REF D/2161

IBM ANALYSTS To £11,000
Opportunities have arisen for ambitious analyst/programmers and programmers to move completely into analysis. An IBM background is the essential requirement, and on-line experience would be ideal. You will be working on major new projects and be involved with the latest database techniques. Graduates with at least six months' commercial experience within the computer industry may also apply. REF G/2518

PROGRAMMER c £8,500
SURREY. Excellent opportunity to widen your experience at this multi-mainframe food company. If you can offer 12 months + IBM MVS COBOL or ICL COBOL you will be trained on a variety of machines including DEC VAX. Non-contributory pension, subsidised restaurant and cheap food. REP C/2613

IBM PROGRAMMER £8,000
ESSEX. Programmer required with a minimum of 12 months' IBM COBOL under DOS/VSE with CICS and DL/1. You will be an integral part of a team developing real-time systems, with each programmer having his own terminal. Prospects are good and within a short time of joining the company you will be trained into analysis. Among their benefits the company offer staff restaurant and sports and social club. REF G/2597

IBM COBOL To £10,000
HANTS. Exciting opportunity with this IBM 4341 site for a keen programmer with two years + IBM COBOL and DL/1 experience. You will be developing financial systems using IMS, DL/1, and CICS, and installing them at various European sites, so you must be willing to travel from time to time. Initial training will be given in the U.S.A. REF C/4281

PROGRAMMER To £10,000
CITY. Can you offer two years' COBOL or ASSEMBLER experience either on a DEC PDP or IBM mainframe? This leading City Bankers have additional requirements for either a DEC or IBM programmer to be retrained on to new kit. A minimum of two years' experience is required together with initiative and self motivation. A full banking package is offered which includes mortgage subsidy. REF G/2612

PL/1 PROGRAMMERS To £10,000
This major professional organisation based in the heart of London would like to hear from PL/1 programmers with 12 months + experience who wish to further their career whilst training in Assembler, and TOTAL. You will play an integral part in a team developing new real-time software packages for the company's prestigious clients. There will be much client contact and the chance is also offered to progress into analysis. If you feel that this position is of interest and are looking to further your career call me now. REF D/2527

RPG III To £12,000
MIDDLESEX. Outstanding opportunity with fast growing insurance firm in North-West London housing an IBM System 38. If you can offer 18 months + RPG III experience, you will have a choice of applications work or technical programming for which training will be provided. They occupy their own building, and you will be joining a young and progressive organisation. REF C/2359

ANALYST/PROGRAMMER To £10,500
BUCKS. Two years + IBM System 34/RPG II required for this position based in the heart of Buckinghamshire. You will be an important member of a small team developing stock control and inventory systems. Some knowledge of analysis is essential but full training will be given. One of the important qualities that the candidate should possess is, self-motivation and the ability to work on own initiative. REF G/2469

RPG II RETRAIN To £12,000
A chance to be trained on IBM System 38! My client needs an experienced IBM System 34/RPG II programmer/analyst to take part in a major conversion project, which will involve liaison with senior managers. After project is completed, you will receive RPG II training and work exclusively on the IBM System 38 from then on. REF C/2611

IBM SYSTEM 34 AND 38 £8-11,000
Outstanding opportunities with Covent Garden-based software house for experienced RPG II or III programmers and analyst/programmers. You will be given every opportunity to increase your technical skills, whilst working on exciting development projects, either as part of a small team or occasionally on your own, with total responsibility for your own client base. REF C/2468

ANALYST/PROGRAMMER RPG III To £12,000
CITY. This new IBM System 38 site require an additional analyst/programmer, preferably with 12 months + RPG III experience and a good analysis background. Applications are all of a financial nature, and as the company are still in the process of converting from IBM System 34 to 38, some maintenance work will also be involved. Benefits include interest free season ticket loan. REF G/259

ANALYST/PROGRAMMER £11,000
OXFORD. Analyst/Programmer with experience on IBM System 34/RPG II required. You will be involved with the design and specification of new projects that are currently underway, and be a member of a small team. Beautiful location, and discount on company products. REF G/2522

OTHERS

HONEYWELL – COBOL £EXEC
If you can offer in excess of two years' Honeywell mainframe experience then my Essex-based client can offer you a challenging and worthwhile career, within their prospering organisation. This technological company seek an Analyst/Programmer hopefully, with TDS, DM4, and COBOL expertise. You will play an integral part in the development of new projects in both a financial and commercial areas. There are also positions available for programmers with less experience. Phone now for more details. REF A/1712

DEC/VAX – BASIC +2 c £11,000
This Middlesex-based scientific concern has recently converted from PDP to VAX machines and are seeking Analyst/Programmers with experience on either kit. There is much development work as the company has recently embarked on some exciting new projects involving graphics and networking. Experience in BASIC is essential and full training in VAX, VMS can be given where necessary. Company benefits include 23 days' holiday, subsidised restaurant and free life assurance. REF A/2559

HEWLETT PACKARD – COBOL c £9,000
My clients, a City-based commodity broking organisation, is expanding its development team to include a Programmer/Analyst with 12 months + experience. As part of this team you will soon become involved in most aspects of development from design to implementation. Hewlett Packard 3000 background is essential, hopefully you will have utilised IMAGE, VIEW and QUERY. This is an excellent opportunity for a programmer to gain varied and practical experience whilst pursuing a worthwhile career. Applications are mostly financial and accounting. REF A/1010

TRAINEE ANALYST – UNIVAC c £9,500
Excellent opportunity for a Programmer with 18 months + UNIVAC mainframe expertise to train as an analyst with this Essex-based company. Currently the company are developing entirely new systems, and are working with two UNIVAC 1100 machines utilising the latest real-time and database techniques. Full training will be given in all aspects of systems design. Applications include finance and stock control. REF A/2295

FORTRAN – PDP £NEG
Can you offer a minimum of two years' FORTRAN expertise, on DEC/PDP equipment? You will become involved in the development of engineering and scientific projects, using graphics. Extensive training is offered in RSX-11-M; CP/M; UNIX and MACRO II if required. Kent based, my client is seeking Programmer/Analysts with the desire to move into systems work in the near future. Salary will be more than commensurate with your experience and other benefits include Luncheon Club and Sports/Social facilities. REF D/1159

COBOL-ICL To £11,000
This major and successful Essex based bureau, is expanding and is currently seeking ICL expertise at many levels from 12 months upwards. COBOL is essential but training will be given on the very latest operating systems and software. You will be encouraged to increase your skills whilst completing exciting development projects of a financial nature. You will also be given the opportunity to train on a new machine. REF D/2425

BASIC – DEC PDP & VAX To £11,000 + mortgage
My clients are currently seeking programmers and analyst/programmers with a minimum of 18 months' BASIC experience on either PDP or VAX machines. The majority of work is of a development nature and will involve the successful applicant in much user contact. Candidates with PDP backgrounds will be given training in VAX, and those that already have a degree of experience will have the chance to improve and utilise their skills. The company offers many financial benefits including low interest mortgage; bonuses; non-contributory pension and free B.U.P.A. REF D/2600

BURROUGHS – COBOL To £10,000 + relocation
Manufacturing concern based on the London/Kent borders and currently housing B1955 equipment in a mixed on-line and batch environment. New development projects have created opportunities for Analyst/Programmers to join teams involved in Order Processing and Stock Control Systems. A COBOL programming background is required, with a minimum of one year's Burroughs mainframe expertise. You will be working in modern offices, and benefits include 23 days' holiday, an annual bonus, and relocation assistance. REF A/2557

DEC – RETRAIN TO IBM! c £9,000
Exciting opportunity for a DEC/PDP BASIC +2 programmer to begin retraining almost immediately on a new IBM 4331 using CICS. You will be required to complete some maintenance on the DEC, whilst developing projects on the IBM. Applications include Order Processing, Management Information, and Ledgers. London-based, my clients offer a good career path, excellent salary and extensive training. REF A/2369

DATAPOINT OR TEXAS INSTRUMENTS £9-13,000
Two outstanding opportunities with London- and Middlesex-based software houses. One requirement is for a Datapoint programmer with Databus and Datashare experience to develop commercial and communications systems. The other for a COBOL Analyst/Programmer with Texas Instruments or other mini COBOL Experience. Both offer full benefits package and very high salaries for the right people. REF D/2615/4

Brushfield House, 12 Brushfield Street
Bishopsgate, London E1 6AN
Telephone: 01-247 3356 (24 Hours)

ENGLEDOWN
COMPUTER PERSONNEL CONSULTANTS (4612)

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STATE OF BAHRAIN
GENERAL ORGANISATION FOR SOCIAL INSURANCE
P.O. BOX 5319
MANAMA
BAHRAIN

Bahrein, with en island population of some 350,000 has e growing diversified economy, the local population is extremely hospitable.

Hot summers and mild winters are a background to extensive outdoor leisure activities; sailing, fishing, water ski-ing and windsurfing are all very popular. Tennis, squash, football and rugby are all well supported. There are many clubs, including British clubs, supporting all activities.

In the evening Bahrain offers many excellent restaurants and a variety of cabaret and theatre entertainment at one of the many five-star hotels.

The General Organisation for Social Insurance was established in Bahrain in 1976 to provide a national pension plan for Bahraini employees together with a work accident insurance scheme for the entire labour force. Further branches of social insurance; sickness benefit and family allowances are planned.

The scheme currently has some 100,000 active members paying monthly contributions to the Organisation. This income is invested extensively in Bahrain and to a lesser extent, abroad.

The Computer Services Department supports these activities and is currently controlling the payments and registration of workers in the scheme.

The Department has 20 staff and operate an IBM 4331 1 MB machine with 1200 MB fixed disk. A CICS driven User network of 15 terminals is supported at the current time under IBM's new operating system SSX.

SENIOR SYSTEMS ANALYST — **up to STG. 25,000**

A Senior Analyst is required to carry out systems development functions and oversee the work of a small team of Analysts. The Department is still very much in its infancy so the need to establish well documented system standards and to keep a broad outlook of the overall direction of systems development will be needed for this managerial appointment.

SENIOR ANALYST/PROGRAMMER – CICS SPECIALIST — **up to STG. 22,000**

A Senior CICS Programmer is required to function in an Analyst/Programmer role to both develop CICS applications and also to oversee the work of junior staff. The person appointed will have extensive CICS experience and will be expected to support the development of programming standards in this area.

Both appointments will require applicants to be of graduate level.

These posts are offered as one year renewal contracts with five weeks' holiday. Appointments may be either on single or married status. Annual return air fares will be provided together with a contract completion payment. Free accommodation is provided by the Organisation.

Salaries are tax-free and will be paid in the local currency. Our currency is Bahraini dinar. Interested applicants should forward detailed resume to the Computer Manager, P.O. Box 5319, GOSI, Bahrain. Interviews will take place in London during August

---

WICAT Systems Ltd.

WICAT Systems, formed in 1976, has the distinction of being the first company in the world to commercially offer the 68000 processor. They are one of the market leaders with a comprehensive and highly successful range of 16 bit multi-user systems, complemented by an extensive range of vertical market software, all produced by the company.

WICAT are expanding their already substantial organization, (T/O in excess of $40 million per annum) by opening their new Headquarters in the Thames Valley.

As a result of this expansion WICAT are seeking to employ the following support personnel:

U.K. SUPPORT MANAGER

THAMES VALLEY — Over £20K + Car

This is a key management position within the company and responsibilities will include selecting and launching UK software packages to be made available under the WICAT label. The position involves working closely with the salesforce, communicating at high levels in both pre and post sales situations, and supervising the day to day running of this busy support operation.

Ideally the applicant will already be running a support team, have a knowledge of UNIX, or commercial operating systems, and understand the needs and demands of realtime, commercial systems and the concepts of database systems.

SOFTWARE SUPPORT CONSULTANT

THAMES VALLEY — Over £12K + Car

We are looking for a person to join the software team of this leading manufacturer at their new Headquarters.

The position involves the development and maintenance of software running on the Motorola 68000, 16 bit multi-user system.

Ideal applicants will be those who have commercial experience using COBOL, FORTRAN, PASCAL or C, a knowledge of UNIX would be advantageous. Above all, applicants must be user and solutions orientated.

Both positions offer exciting opportunities to join one of the most successful and rapidly expanding high technology companies in the UK.

The company offers generous fringe benefits but the real benefits derive from working for a growing company which is already one of the outstanding successes of the 1980's.

For further details contact Andy Cousins at our Reading office or write sending a full C.V.

McCOURT COUSINS LTD.
27-29 Greyfriars Road, Reading, Berkshire. Telephone (0734) [illegible]
Chesham House, 150 Regent Street, London W1R 5FA. Telephone 01-734 [illegible]

CODEX (UK) LTD
a subsidiary of Motorola Ltd

APPLICATIONS SUPPORT

As a major supplier of data communication products in UK we place a high emphasis on the quality of our technical support.
Currently we have vacancies for APPLICATIONS ENGINEERS based at our THORNTON HEATH and MANCHESTER offices to join a group providing technical support to our UK sales staff. Successful applicants will need to demonstrate:
- Experience in Network planning and organisation
- Knowledge of communications protocols.
- Ability to clearly present technical solutions both verbally and in a written format.
- A good personal presentation.

It is anticipated that you will be either a graduate in appropriate disciplins or able to demonstrate equivalent experience.
An attractive salary is offered, plus the use of a company car. Other benefits include life assurance, private medical plan, pension scheme, all non contributory, twenty days annual holiday.
Please telephone for application form

Miss S. J. Sewerin
Sec/PA to Managing Director
CODEX UK LTD
01-689 2101

SOMERSET COUNTY COUNCIL
SOMERSET COLLEGE OF ARTS AND TECHNOLOGY
TAUNTON
Department of Engineering

LECTURER GRADE II IN COMPUTING (TWO POSTS)

These two posts are available from September 1st, or as soon as possible thereafter and must be filled not later than January 1st, 1984. Essential requirements are a degree or professional qualification, some previous teaching experience, or teacher training and experience of the use of computers in commerce and/or industry.

Further particulars and application forms, s.a.e. from Chief Administrative Officer, Somerset College of Arts & Technology, Wellington Road, Taunton TA1 5AX.

Closing date: July 25th, 1983.

VMS Specialist
Berks. £11K-£13K + car
We are urgently seeking a post-sales support person to take responsibility for the support of our client's market-leading range of system software for VAX/VMS. The successful applicant will have a good client manner and have already worked extensively with VMS in a support or development role. Full product training will be available if required.
Contact Brian Coates.

IBM Systems Support.
N.W. London c£13K + car
We would like to hear from candidates who have system level knowledge of MVS and who can find their way round the internals of VSAM, JCL, Link Edit maps etc. Your task will be to support our client's internationally successful project management package. Product training and excellent prospects in a company with an impressive record.
Contact Terry Harvey.

Real Time Micro Systems
Glouc. £8K-£10K
With this client there is all the challenge and enjoyment of real time systems; controllers and concentrators gathering data and large networks of linked processors all in on-line operation. We would like to hear from programmers with assembler and a high level language, e.g. PASCAL, CORAL, who believe they have something to contribute.
Contact Terry Harvey.

DEC Analyst/ Programmers
Camba. £8K-£12K
A small systems house specialising in supplying timesharing services and turnkey systems to clients in the finance, manufacturing and distribution sectors of industry requires additional staff urgently. Opportunities exist to become involved at all levels with a variety of projects. Most of the development is in BASIC+2 and familiarity with this language is essential.
Contact Brian Coates.

Software Support
Middx. to £14K + car
Take this opportunity to join one of the most successful computer companies of our time. You will need several years technical software experience to include: real time, data communications and/or database systems. Analysts with banking or financial systems experience would also be of interest. You cannot fail to be impressed by this client.
Contact Terry Harvey.

Electronics Engineers
Bucks. £10K-£14K
A world leader in the design and manufacture of CNC systems has additional requirements resulting from growth. We are seeking electronics engineers who can work from design level through specifications, costing, prototyping and production in a manufacturing environment on advanced control systems. Ideally a sound engineering background in a similar position is preferred.
Contact Terry Harvey.

Sen. S/W Engineers
Berks. to £11,000
A small development team working on product implementation in the area of international telex systems is seeking additional experienced software engineers. Successful applicants will work closely with electronics designers on new products and facilities. They will play a full part in providing project plans, monitoring schedules and training junior engineers in procedures and techniques. PDP11 and Intel development tools.
Contact Terry Harvey.

Project Management
Herts. to £14,000
To provide consultancy on and undertake the specification, design and implementation of systems software (executive software, interface handlers, language systems, etc.) for real-time scientific applications with a British manufacturer. Fluency in Assembler and one or more of CORAL/PASCAL/BCPL in a real-time environment is essential, as is a degree, preferably in Computer Science.
Contact Brian Coates.

Programmers Minis/Micros
Berks. £9K-£12K
A successful company with a product having a special place in the communications and travel industry, requires several programmers at different levels to join existing development teams. Areas of relevant expertise include Z80 Assembler, PDP11 systems, UNIX and 'C', PLZ, Viewdata, CP/M, comms and travel agency applications. Excellent benefits include special holiday discounts.
Contact Terry Harvey.

IBM Assembler Programmers
Middx. £8K-£15K
Our client is a small friendly company with a varied workload. We are seeking two or more programmers with a minimum of one year's experience including CICS, SHADOW, DL/1, VSAM and general applications development. This is no 9-to-5 job; enthusiasm and self-motivation are required together with considerable versatility. High rewards await the right candidate.
Contact Brian Coates.

Systems Consultants
Middx. to £18,000
A rapidly expanding computer services and consultancy company requires top level specialists in data communications, distributed processing and electronic point of sale systems. Successful applicants can expect to become involved in any or all activities from: Consultancy, project management, system design, program development, system testing, installation and education. Rewards will be consistent with the level of experience.
Contact Brian Coates.

DEC Software Applications
Hants. £9K-£12.5K
A major international company has several vacancies created by expansion which require DEC software expertise. Systems are from PDP11 to VAX with experience required in Macro 11, FORTRAN, BASIC, Pascal and Ada. Projects cover industrial control, instrumentation, real time simulators and in-house applications. If you have from two years experience upwards please get in touch.
Contact Terry Harvey.

Software Engineer
Bucks. £9K-£12K
For this position the ideal candidate will have a background in electronics but more recent experience in software. Preferably PLM and assembler level micro development systems and the 8086 family of processors. You will work on control systems in the area of CNC and related products at a design and specification level.
Contact Terry Harvey.

Tech. Pubs. Manager
South-East to £14,000
A young, high-technology company has now reached a point where it needs to formalise its documentation procedures and is seeking to recruit a technical publications manager. The position requires a high degree of organisational skill, commercial awareness, technical expertise and above all, enthusiasm and a professional approach to documentation standards. An outstanding opportunity for career development.
Contact Brian Coates.

DEC Financial Programmers
Surrey/Herts. to £12,000
If you have a minimum of 2 years experience of programming commercial applications, preferably in BASIC+ or BASIC+2 on PDP11 under RSTS/E or VAX/VMS, then here is an opportunity to develop your career with a successful commercial software house. Our client is involved in all aspects of software production and installation and currently requires several programmers.
Contact Terry Harvey.

Product Support
N.W. Middx. to £13K + car
Our client has established an impressive lead in the provision of EFT systems for Tandem computers. These processing and switching systems are designed for users of all sizes. We would like to hear from well motivated people with experience of screen based applications. Candidates must have the appropriate appearance and manner for support work.
Contact Terry Harvey.

Comms. S/W Design
Herts. to £12,000
Develop your career and your existing communications software skills by joining a company already firmly established in this high growth sector of the computer industry. We are seeking software people with experience in developing 3270 compatible systems and as much experience as possible in X.25 and L.A.N. products. Experience in 'C' or PASCAL using M68000 and/or TI9900 would be useful.
Contact Terry Harvey.

S/W Design & Development
Middx. £9.5K-£15K
Two vacancies exist in this development group responsible for the production of Advanced Signal Processing and CAD systems. Packages will include UNIX-compatible Operating Systems, LAN, compilers, high-speed interactive graphics and Videotext look-alike software, using PASCAL and BCPL on Special Processor and system architectures. Degree (or equivalent) and expertise in BCPL and disc-based O.S.'s is essential.
Contact Brian Coates.

Micro Specialist
Middx. £9K-£12K
Your job will be to work with one other computing person in a very successful manufacturing company which is keen to increase the use of computer applications. Candidates will need to display experience in 'C' or other block structured language, knowledge of CP/M and async. protocols useful. In short we are seeking a 'hands-on' expert.
Contact Terry Harvey

Systems Executive
Herts. £10,000 + car
Approximately 3 years commercial applications including communications, office automation and COBOL are the prime requirements for this specialist support role. You will work in close conjunction with the sales and marketing department and be responsible for the installation and post-sales support of Distributed Data Processing and Office Automation software, together with some pre-sales work.
Contact Brian Coates.

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If you can match up to these standards the rewards are unlimited and a call to Terry Harvey could introduce you to an exciting career you'd never previously considered.

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Brian Coates – Chesham (0494) 785722.

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HR

SYSTEMS & PROGRAMMING

IBM MAINFRAME

JUNIOR PROGRAMMERS
CENTRAL £7,000-£9,500
Vacancies exist for upwards of 9 months' experience of COBOL (either DOS or MVS) on any IBM mainframe. For one position a knowledge of CICS or DL/1 would be an advantage but full training in online techniques will be provided in the other positions. REF. MB/CT.

PL/1 and ASSEMBLER
ALL AREAS £7,000-£13,500
For upwards of 12 months' experience of PL/1 and/or ASSEMBLER on any IBM mainframe (DOS or MVS), several different installations in the Greater London area have positions from Programmer to Analyst Designer level available. REF. SR/CT.

IBM SYSTEMS PROGRAMMERS (ALL LEVELS) £8,000-£14,500
Vacancies exist in all areas of Systems Programming from Junior (with 12 months' experience) to Senior levels. IBM mainframe (303x and 4300) installations require knowledge of OS/MVS, DOS/VSE), VM, CICS, ASSEMBLER in a wide range of differing environments from small end user to installing software products (in a consultancy role) in Banking where mortgage benefits apply. REF. MB/CT.

IBM COBOL (SENIOR POSITIONS)
CITY to £14,000
Progressive Financial concern are currently seeking a Senior Analyst and Programming Team Leader for major development systems. These are highly responsible positions and require at least 3 years' experience of important development assignments. Any exposure to ON-LINE D/B or mini computers in your career to date would be desirable but not essential. Excellent benefits package and opportunities to career progression. REF. SR/CT.

IBM GSD

IBM SYSTEMS 34 (Retrain on 38)
ALL AREAS £7,500-£13,000
We have several clients currently either running IBM System 38s or in the process of installing the new machines. Requirements vary from Junior Programmer to Senior Analyst/Programmer (with increasing responsibility) with experience of RPG2 gained on either System 3 or 34 kit. Retrain to RPG3 in a new environment and gain excellent database and on-line experience. REF. MB/CT.

RPG2
CENTRAL to £10,000+benefits
Banking organisation running an IBM system 34 requires two Programmers to train into Analyst/Programmer roles on Banking Systems. No previous Banking experience is required as training will be provided on these applications. Upwards of 9 months' RPG2 experience on the System 34 is required. Overseas travel and mortgage available. REF. MB/CT.

OTHER MAINFRAMES

ICL PROGRAMMERS
ANALYST/PROGRAMMERS
BERKSHIRE £11,000+benefits
Opportunities exist for experienced ICL 2900 personnel to join this progressive installation. Essential experience is 2 years' + COBOL with DME, TP and IDMS. Necessary education will be given in VME, DDS and Structured Techniques. Benefits include discounted holidays. REF. MN/CT.

ICL PROGRAMMERS
S. LONDON to £10,000
Good COBOL with VM2900 and IDMS is required together with 3 years' + overall DP experience to work in this progressive and established Software House. The environment is busy and interesting, and offers excellent career prospects. REF MN/CT.

UNIVAC 1100 COBOL
HOME COUNTIES
PROGRAMMERS to £9,000
ANALYST/PROGRAMMERS £13,000+perks
We have clients in Financial and Manufacturing environments seeking to fill new positions. DMS and TIP is essential for the Senior positions. Specific requirements for a Project Leader and Senior Analyst Programmer with Manufacturing background and Analyst Programmer with financial knowledge. Perks include cars and mortgages. REF. MN/CT.

VAX COBOL PROGRAMMER/ANALYST
LONDON £13,000
A Programmer Analyst with solid COBOL experience on DEC-VAX is required for a supervisory position in this well-established company. On line, and/or Data base background would be useful for new project development due to business growth. Good perks plus pleasant working environment and regular salary reviews. REF. JH/CT.

BASIC+PROGRAMMER/ANALYST
BERKS £10,000
This Software House currently developing commercial systems is seeking Programmer Analysts with upwards of 12 months on DEC PDP11 under RSTS/E using BASIC+. General business awareness is a must, together with the ability to liaise with clients in order to develop and support their systems. A very varied and rewarding job. REF. JH/CT.

VAX-BASIC/BASIC+2 ANALYST/PROGRAMMER
STAINES to £11,000
Due to increasing business our client, an established company, requires an Analyst Programmer with a minimum of 18 months' BASIC+2 or VAX-BASIC. You will become involved in developing new integrated Commercial and Manufacturing systems on VAX and must be able to communicate effectively at all levels as well as working under pressure. Bonus, pension and other benefits apply. REF. JH/CT.

CONTRACTS

PROGRAMMERS – ANALYST PROGRAMMERS FOR LONDON AND THE HOME COUNTIES

IMMEDIATE REQUIREMENTS

HP3000, COBOL, IMAGE	6 MONTHS
BURROUGHS B6800 ALGOL TECH SUPPORT	4 MONTHS
IBM COBOL DOS/VSE CICS DL/1	6 MONTHS
NCR VRX COBOL	12 MONTHS
BURROUGHS MPL 2 CMS	3 MONTHS
IBM SYSTEM 23 BASIC	6 MONTHS
HONEYWELL L66 COBOL IOS TDS	6 MONTHS

SEPTEMBER START

IBM COBOL MVS CICS DL/1	6 MONTHS
IBM PL/1 MVS SHADOW/CICS	4 MONTHS
DEC VAX/PDP11 COBOL/BASIC+	6 MONTHS
ICL ME29 COBOL	3 MONTHS
IBM SYSTEM 38 RPG3	3 MONTHS

For full information on these and other contracts call Bruce Herrington.

CPS RECRUITMENT CONSULTANTS

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COMPUTER PROGRAMMERS

The Equitable Life, a long established and expanding organisation, has vacancies for two Programmers who will join them in their modern air-conditioned offices close to the centre of Aylesbury.

Applicants, aged 20-26, should have at least 1½ years' commercial programming experience, using the COBOL language in an ICL environment.

The Society offers competitive salaries plus an annual bonus. Other benefits include a non-contributory pension scheme, 20 days' holiday a year, a staff restaurant providing free lunches, and the opportunity in the future to be considered for a staff house purchase loan at concessionary rates.

Please write or telephone, indicating briefly how you meet our requirements, to:–

Mrs Carol Bird, Staff Assistant, The Equitable Life Assurance Society, Walton Street, Aylesbury, Bucks, HP21 7QW. Telephone: Aylesbury (0296) 33100.

The Equitable Life

Analyst/Programmer

Frequent North European Travel
c.£13,000 p.a.

Glaxo is a multi-national pharmaceutical group whose business is expanding rapidly. In response to increasing demand for better management information, both internally and with respect to the parent company, our North European subsidiaries are expanding their computer facilities and systems. This programme of expansion is being co-ordinated through our North European Office located at Greenford, Middlesex.

We are now looking for an experienced Analyst/Programmer who can work with and advise the companies concerned on their development programmes.

You will be educated to degree level and have good technical knowledge and experience of Hewlett Packard equipment. Although based at Greenford, frequent visits to the North European countries, sometimes at short notice, will be required. You will be expected to show understanding and initiative in your dealings with staff of the subsidiary companies.

Starting salary, including guaranteed bonus and Outer London Allowance, will be in the region of £13,000 per annum. Excellent benefits include non-contributory pension, 25 days' holiday and season ticket loan scheme.

For an application form please write to: Miss P.A. Sandry, Senior Personnel Officer, Glaxo Holdings p.l.c., Clarges House, 6-12 Clarges Street, London W1Y 8DH, or telephone 01-493 4080 ext. 300.

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SOUTH WEST UNIVERSITIES REGIONAL COMPUTER CENTRE

UNIVERSITY OF BATH

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SWURCC provides computing services to six universities in the South West via one of the first X.25 based open networks, involving ICL, GEC, Honeywell, DEC and Prime equipment and BT's Packet Switch-Stream. The centre is equipped with a dual ICL 2980, GEC 4000 machines, PERQ and UNIX-based micro equipment. Present developments include a joint project with ICL to develop networking software for VME for the UK academic community.

Applications are invited from recent graduates or potential team leaders to work on this and [illegible] projects. Experience of wide or local area networking or operating systems and [illegible] UNIX, VME or OS 4000 is desirable especially for the senior post.

The appointment [illegible] three years initially on the scale £11,150-£14,125 or £6,310-£11,615.

Further [illegible] and application forms from the Personnel Officer, University of Bath, Bath [illegible] 23. Closing date: 25th July, 1983.

(4489)

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The Computer Centre operates a VAX 11/780, microcomputers and an extensive terminal network. Two alternating shifts are in operation.

The ideal applicant will be self-motivated with an outgoing personality and be keen to play an active role in this developing Computer Centre. A knowledge of operations in an educational computing environment would be an advantage as would a good knowledge of filestore management, but the ability to learn and adapt to varied user demand is considered most important.

Further particulars and application forms available from: [illegible] Southampton College of Higher Education, East Park Terrace, Southampton SO9 4WW. Telephone: 28381 ext. [illegible]. Closing date: July 22nd, 1983.

(4474)

SOUTHAMPTON AND SOUTH WEST HAMPSHIRE HEALTH AUTHORITY

Wessex Regional Medical Physics Department, Southampton General Hospital, Nuclear Medicine Physics

Basic Grade Physicist

required to be responsible for the maintenance and efficient routine use of imaging and computer equipment in the Wessex Regional Department of Nuclear Medicine and to provide development support for the activities of the Nuclear Medicine Physics Group.

Applicants should be qualified to degree standard and have suitable or related electronics experience. Suitable candidates will be interested in computing and image processing. Opportunities to study for a higher degree and training in other aspects of medical physics may be available for suitable candidates.

For further information or to make an application, please contact: Dr. P. J. Hewlett, Wessex Regional Department of Nuclear Medicine, D Level, Centre Block, Southampton General Hospital. Telephone: Southampton 777222, extension 4343.

Closing date: July 29th, 1983.

(4475)

POLYTECHNIC OF THE SOUTH BANK

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DEPARTMENT OF MATHEMATICAL SCIENCES AND COMPUTING

Temporary Senior Lecturer/ Lecturer, Grade II in Computing

(Ref: X.13) (Re-advertisement – 2 posts)

Applications are invited from suitably qualified or experienced candidates to teach computer science on undergraduate courses within the Department. Initially the post is for one year from 1st September 1983 with the possibility of extension.

Salary will be in the range:
Senior Lecturer: £11,822 (a b) £14,382 p.a.
Lecturer, Grade II: £8,154 (a 10) £12,507 p.a.
} inclusive of London Allowance

Starting salary will be dependent on qualifications and experience.

It is hoped to appoint suitable candidates without delay and an immediate application is advised. Further details of the Department and its activities together with an application form may be obtained from the Staffing Office. Tel. 01-928 8989 Ext. 2[illegible].

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The recent announcement of the MicroNode and the huge response its editorial coverage received means Xionics is set to expand. The designers we seek will be ideas men/women possessing the skills to implement their ideas through to pre-production.

You will need to be experienced in one or more of the following areas:

Multi function workstation software
Continuous improvement and the will to keep one step ahead means we need people with expertise in: word processing, graphics, printer drivers, emulation, user friendly interfaces, multi-user operating systems.

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New networks and new enhancements require high calibre designers versed in: L.A.N.s, fibre optics, network interworking, layered communications protocols.

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To ensure the successful implementation of our advanced network systems, designers/programmers are sought to provide tests and diagnostics software for Xionics' multiprocessor systems.

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Highly skilled hardware designers/engineers experienced in microprocessors, multiprocessor architectures, communications, high speed digital networks/circuits will be able to contribute to planned products ranging from high speed L.A.N.s to high definition colour workstations.

Xionics future success will depend on the dedication and skill of our development staff.

To join the professional and self-motivated people who make up our development teams, you will need to be able to work unsupervised in a team environment, have communication skills, commitment and energy.

If you feel you can contribute to our continued growth, please contact in the first instance George Shaw on 01-549 9236 (24 hour answering service)

XIONICS LTD are a subsidiary of Smiths Industries plc.

(4830)

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XIONICS **Sloangate** Recruitment Advertising

alba

Aluminium Bahrain (ALBA) is the major aluminium producer in the Arabian Gulf. Established in 1969, the company now employs some 2000 local and expatriate staff. Current major expansion creates a rewarding opportunity for a:

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COBOL

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to make a significant contribution within a 3 year contract to the company's established Central Computer Department. Set up in 1974, and now employing some 30 staff, the department is involved in the development of on-line systems on an IBM 4331.

Candidates should have a minimum of 3 years' COBOL experience plus a knowledge of VSAM, ICCF/CMS, CICS or MANTIS.

Salary, at present totally tax-free and freely transferable, will be negotiable in five-figure range.

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† Benefits calculated at current exchange rates.

Bahrain is a stable country with a liberal government. English is widely spoken and the company is experienced in the rapid and smooth entry of expatriate staff into the local community. Extensive sports and social facilities exist.

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Because of their policy of continued expansion our clients are now seeking dedicated professionals in the following areas:

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- Software tools

Applicants should have a degree in computer science, electronic engineering, or a similar discipline, and a minimum of two years' development experience in real-time applications.

For further information about these positions please contact Edith Watson at Computer Search and Selection, Hamilton House, Marlowes, Hemel Hempstead, Herts HP1 1BB.
Tel: Hemel Hempstead (0442) 40761.

Systems Programmers and Consultants

For the development of systems tools and utilities, including the provision of a portable toolset based on the UNIX operating system. IBM or VAX background preferred, and a knowledge of 'C' or PL/M would be an advantage.

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To become part of a team currently developing office communications and networking software for Z80 based microcomputers.

PL/1 Programmers

To customise generic systems software for PABX applications. Knowledge of MVS essential. Experience of IMS or SPF would be an advantage.

Team Leader, Engineering Development

The successful applicant will be responsible for a team of up to 6 hardware engineers. You should have a minimum of 5 years' development experience and a sound appreciation of both hardware and software, particularly in INTEL or Z80 based systems.

Hardware Engineers

For a variety of applications up to and including the prototyping of new products. Some software knowledge would be an advantage.

Computer Search & Selection

COBOL PROGRAMMERS & ANALYST/PROGRAMMERS

CENTRAL LONDON **£7,500-£11,000**

Several outstanding opportunities exist within this rapidly expanding international organisation with a multimillion turnover.
The data processing department houses up-to-the minute mini computer technology with a wide variety of modern periphery equipment. In order to meet growing demands our client is seeking to recruit both Programmers and Analyst/Programmers to progress their career in a fast moving, real-time environment.
If you can offer 18 months' COBOL expertise and want to find out more about these exciting positions contact DP Selection Services quoting ref A1.

COMMERCIAL SYSTEMS DEVELOPMENT

SYSTEMS ANALYSTS **SALARY £11,000-£14,000**

Our client, a major UK Company based in LONDON, is seeking to recruit experienced Systems Analysts to work on their IBM mainframe.
Ideally candidates will be able to demonstrate experience of systems analysis from feasibility through to implementation in a commercial environment. Some knowledge of interactive and/or database systems would be advantageous although not essential.
The opportunity to work on new development projects in a dynamic environment is combined with excellent career potential and salary package.
Contact DP Selection Services quoting ref A2.

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ESSEX **c£8,000**

Can you offer at least one years' COBOL or RPG programming experience on any mainframe? Our client is seeking to recruit a number of Programmers, keen to progress their career in an IBM environment using IBM 4341 DOS/VSE for their installation based in Essex. An excellent range of company benefits are also available. Please write or telephone quoting ref A3.

COBOL PROGRAMMERS & ANALYST/PROGRAMMERS

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Our client's systems development team is constantly expanding in order to meet project demands from a variety of systems in an interactive database environment. Working upon very powerful minis linked to a mainframe, candidates should possess a minimum of two years' mainframe COBOL or RPGII.
You will be given the opportunity to join a friendly team and liaise with the Users in this established and rapidly expanding company. Please write or telephone quoting ref A4.

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CENTRAL & WEST LONDON **£9-£13,000**

New PL/1 based projects are in the early stages of development at our client's sites in Central and West London. These projects include the use of CICS and DATABASE software and education and training will be provided on these techniques where necessary.
PROGRAMMERS will be able to offer around two years' experience and will be keen to progress towards analysis. ANALYST/PROGRAMMERS will have had some exposure to design and specification work and will enjoy working closely with Users.
To learn more about these developments telephone or write now quoting ref A5.

IMS PROJECTS – SOUTH COAST

ANALYSTS AND SENIOR PROGRAMMERS **£9-£12,000**

Our client is currently in the early phases of development of major new IMS based systems. New project requirements have lead to an increase in staff requirements for alst experience including some database and on-line systems.
SENIOR PROGRAMMERS will need to offer sound IBM COBOL together with some database knowledge and can look forward to specifying and developing new IMS batch and real time programs.
Telephone or write now for further information quoting ref A6.

These are just some of the career opportunities that we are currently assisting our clients to fill. We would be pleased to talk to you regarding these and many other vacancies that we are currently aware of. Telephone one of our consultants to discuss your particular requirement and how DP Selection can help you.

dp SELECTION SERVICES
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REUTERS

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VAX 11/780 VMS PASCAL DECNET

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As part of our programme to remain the world's leading news organisation and supplier of electronic information services to the media and financial community we are expanding our technical development group in London.

We have one of the largest private communications networks in the world which we are now in the process of replacing. Satellites, LANs, microwaves and advanced networking all play major roles in our approach to developing our new worldwide communications facilities and databases.

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Our requirement is for programming staff to join small highly skilled project teams and contribute to the design and development of Intel and DEC based real time systems to challenging timescales, using excellent development facilities.

Candidates will have had one or more years experience of programming in high level real time languages such as **PLM/86** or **PASCAL** under the **RMX/86** or **VMS** operating systems. Experience with multiprocessor MULTIBUS systems, MMX, Communications protocols, LANs, DECNET or database systems would be an advantage.

For a confidential discussion regarding these opportunities please telephone **Miles Richards** on **01-938 1804 (24 hrs)** or **01-847 2385** evenings 7 pm – 9 pm.

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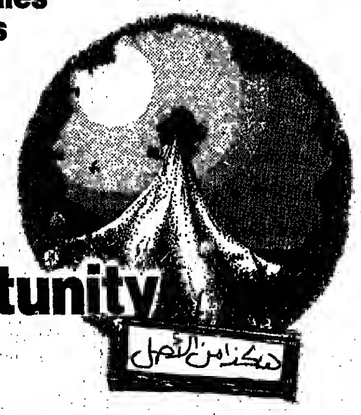

Our client tha Nissal Sangyo Company, a trading company within the Hitachi Group, has fully established itself in the market placa by offering outstanding products. Thay are a major supplier of peripherals in tha U.K. supported by CAREER and COMPANY DEDICATED profesaionals.

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Successful candidates will ba aged 28-35, educated to degraa or HND standard and with a proven track racord in technical sales to major OEM accounts.

Baaad at their modarn prestigious headquarters in Ealing you can expect a salary of around £15,000 depandant upon qualifications and experiance plus a 10% annual bonus and a luxury 2.3 litre car. All tha usual company benafits are includad.

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£12K–£15K + Profit Shoring

Top flight skills, o strong programming ond business onolysis bockground, speciolising in on-line implementotion in o finonciol environment, need to be complemented by the personolity ond communicotive obility to present and promote DP focilities to users.

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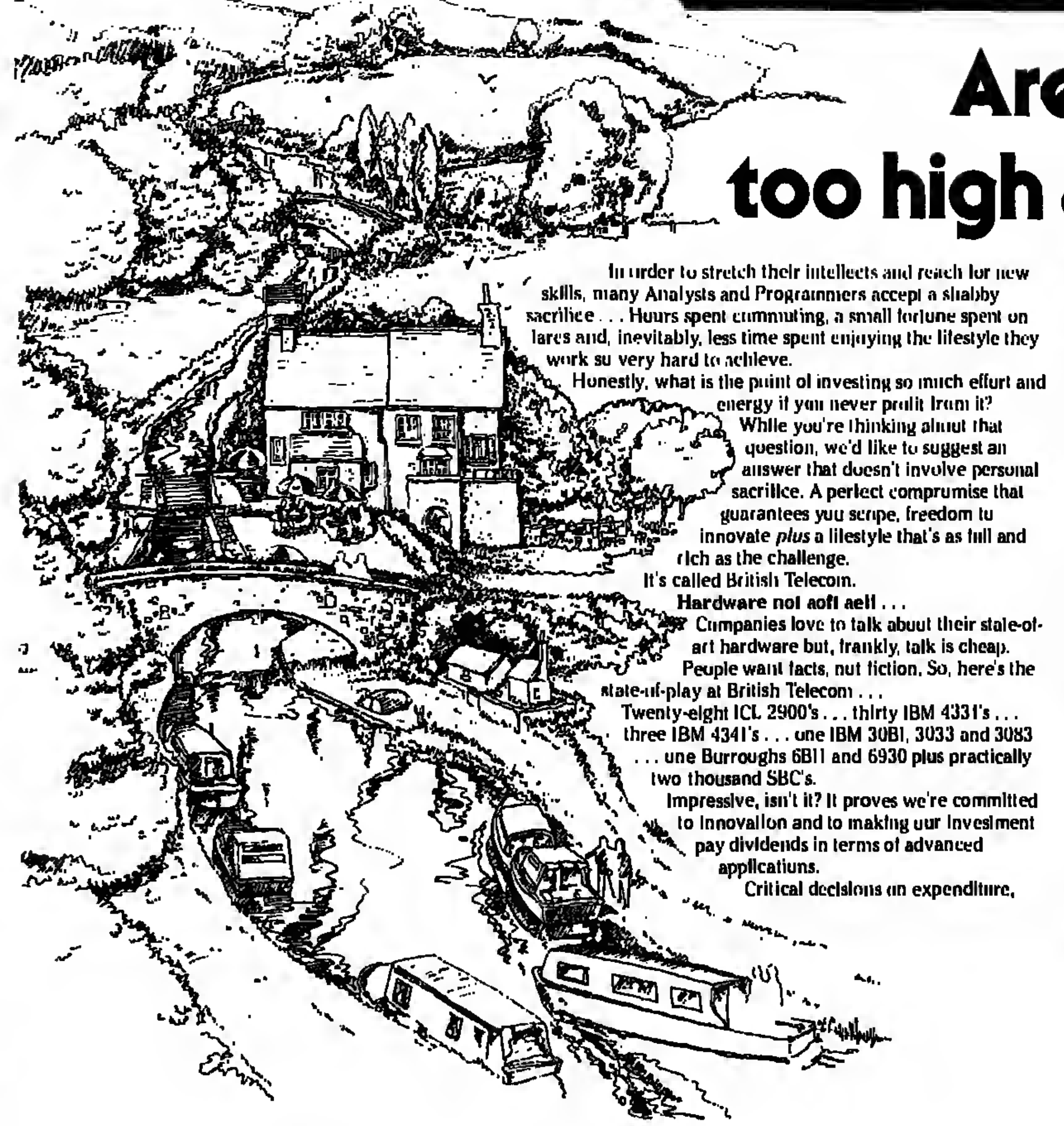
ANALYSTS/PROGRAMMERS



Are you paying too high a price for ambition?

In order to stretch their intellects and reach for new skills, many Analysts and Programmers accept a shabby sacrifice . . . Hours spent commuting, a small fortune spent on fares and, inevitably, less time spent enjoying the lifestyle they work so very hard to achieve.

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Companies love to talk about their state-of-art hardware but, frankly, talk is cheap.

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Creativity is a scarce commodity. That's why we're offering up to £11,000 for Analysts/Programmers and as much as £13,000 to Senior Analysts/Programmers. Exceptional candidates can command even more.

However the beauty of British Telecom is that you don't have to slog into some grimy London office to realise your ambitions. We're bringing the state-of-art to you . . .

We have Telephone Areas throughout the UK and virtually all of them need that special spark of software genius. In other words, we're setting you free. We're offering you the perfect compromise of total, real-time systems involvement with an altogether richer lifestyle.

That's our unique proposition to everyone with at least 12 months' experience of isolating and solving complex systems problems. Professionals who are fluent in COBOL, PL1 and BASIC. Ideally, young men and women with more than a nodding acquaintance with IBM 4331 and/or ICL 2900 systems.

If you have the vital qualities and qualifications, ring us now. We're planning special OPEN EVENINGS when you can walk in and get together with our senior systems people over a glass or two of wine. It's a unique opportunity to meet the team that's setting the pace in applications development . . . so make a date with British Telecom. **Ring Michelle Priestley on Freephone 2593.** 24 hour service.

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If you really can't make an Open Evening, but would like to know more, get in touch now.

(4591)

Data Processing

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Basic Programmers

Here's a big plus to your future!

£8-12,000 + benefits **Cambridgeshire**

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In order to cope with current and future workloads, our Client seeks to recruit a number of Programmers with sound experience of DEC BASIC to become involved in the development of a wide range of systems on behalf of Clients, using BASIC+II v.2 and the RMS file handler on a powerful, dual PDP 11/44 configuration under RSTS/E.

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Our Client offers excellent terms and conditions of employment which include full relocation assistance when required.

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Database systams support

To support the meinframe detabese systems supplied by Intel, we need an experlenced delabase speclallst. You will probably be working on a large IBM site under MVS, DOS, VM – CMS or simller mainlrame systems. If you also heve e knowledge of distributed databese applicetions on microcomputers end the essocieted communicetion expertise, it would be highly desirable.

Real Time/TP operating systema support

To support tho sophisticeted IRMX opereting system, we need speclallsts in the real time applicetions on microcomputers both commercially and technically. IRMX experience would be desirable but not essentiel if an equivelent expertise is present. Experience of TP applicetions would also be useful.

XENIX/UNIX support specialist

To support the XENIX/UNIX opereting system on Intel microcomputers end the associated office eutomation and reletionel databese products, we require en experienced specielist of this type. You will probebly have worked on XENIX/UNIX, preferably on Intel eystems, end it is highly desireble that the applicetion areas were in office eutometion products.

Cendidetes for any of the above posts are unlikely to be under 26 yeers of ege.

Eech of these poeitions offers an outstanding opportunity to join en Industry leader at an exciting stage of its growth: cereer progression is limited only by individual performance end the compensation peckage reflects the importance of the posts.

Please telephone for an epplication form or send a CV to Rey Withey, Personnel Maneger, Intel Corporetion (UK) Ltd, Pipers Wey, Swindon, Wiltshire. Tel: (0793) 488388.

These vacancies are open to male and female applicants. (4587)

intel

If systems development is your strength and IBM System 38 your experience, you're our kind of Programmer

c.£9,000 **Epsom, Surrey**

Durst UK, based in Epsom, Surrey, part of en international group designing, manulacturing and marketing photogrephic procesaing, printing and enlarging equipment throughout the world.

The company's total commitment to Data Processing extends into many internal functione and is highlighted by the davelopmant ol a totally interactive system, advanced procese control, as well as office automation, based on the IBM System 38 model 7 using RPGIII. It is interesting to record that the company's developmant ol computer applications haa made the installation an IBM reference site.

For young computer professionele looking to meke their mark in a amall team environment and develop a career in systems development, this is an ideal opportunity to become involved in new projects. This will involve working closely with usera and manegement teams identifying their needs and developing and implementing new systems.

The need is for a graduate-calibre Programmer ideally aged early — mid 20's, who hes 6-9 monthe' experience of System 38 and good communicative and interpersonel akills. You should elso be hard-working, a good team member and ambitious to develop into a broader role involving systems analysis.

We'll offer e selery negotiable up to £9,000 pa plus the benefits to be expected from e successful international company.

If you have the ability and enthusiasm to work in e career-stretching role where your knowledge and talente are consistently chellenged, we'd like to hear from you.

Please write giving details of your career to date to J. O. O Mahony, Personnel Manager, DURST (UK) LIMITED, Longmead Industrial Estate, Felstead Road, Epsom, Surrey KT19 7AR Tel: Epsom 26262

Durst

PHOTOGRAPHIC EQUIPMENT

Senior Analyst/Programmers — Holland

To join an existing team in The Netherlands developing dynamic real-time, on-line data-base and communications system for an international oil and chemical concern. A sound knowledge of IBM System 38 is required together with RPG III.

Due to the planned expansion of the data processing facilities to incorporate the total world-wide organisation this will enable successful candidates to become involved with a major communications network from its inception. Ref: 01/05

Software Engineers/Project Leaders — Herts

As one of the UK's leading communication equipment manufacturers our client is seeking to enhance its Software Tools Development team.

Although mainframe based these tools are intended for use by teams working on new micro-computer development systems. The software tools section are responsible for the design, development and support to both in-house and client users.

Successful applicants will have a minimum of 3 years real-time or communications experience, proven involvement in software tools development and/or support preferably with knowledge of UNIX and 'C'.

Excellent salaries plus benefits package is offered. Ref: 01/06

Telecomms Development — Essex

Engineers, from Graduate to Senior levels, with experience in both hardware and software aspects of the telecommunications industry are required to adapt and modify existing equipment to conform to British Telecom standards and overseas customer requirements.

Full large company benefits plus relocation, where applicable, is available to successful applicants. Ref: 01/07

Hardware Development Engineers — Herts

To develop hardware for a new range of mini- and micro-based hardware for Electronic Mail, Office Automation, Networking and Telecommunications systems. Good design ability is a necessity with a willingness to work in a team environment. Full training will be given where required.

Previous development experience on ZILOG, INTEL or MOTOROLA hardware is advantageous plus the ability to understand the software requirements generated by the hardware development. The company's rapid growth means excellent promotion prospects.

The number and variance of current and new projects together with the most up-to-date laboratory facilities make this an opportunity not to be missed. Ref: 01/08

Lecturers — London

To join an organisation specialising in the presentation of Programming and Systems Analysis courses to DP personnel. Courses are mainly aimed at the commercial skills i.e. COBOL programming and the design of sophisticated business systems.

Candidates should have a sound programming and/or analysis background with the desire to instruct. Full training in the preparation and presentation of courses will be given as well as the opportunity to be trained in new languages, techniques, etc. These positions offer both challenge and reward. Ref: 01/09

Technical Authors — UK & Overseas

Hardware and Software authors for a large number of clients on projects covering the following topics:

- Operating Systems/conversion manuals
- User manuals for: Intelligent Terminals; UNIX & 'C' – microprocessor development systems; commercial systems
- DEC BASIC programming manuals
- Telecommunications minis
- Systems Descriptions – IBM System 38
- Process Control – sales and technical documentation

Ref: 01/10

Software Engineers — Beds

To join a team developing new INTEL 8086 based machine tool control systems utilising a common core of software. Several projects are currently envisaged – some still in the early design stage.

Applicants should have 2-3 years Process Control/Real-Time experience using INTEL and PL/M. A knowledge of ASSEMBLER would also be a distinct advantage.

A realistic salary and benefits package together with excellent future prospects in a challenging software development environment makes this a first class opportunity. Ref: 01/11

Analysts & Programmers — Surrey

The computer services division of an international group have a number of vacancies for Analysts and Programmers with experience of commercial applications on PDP 11 and/or VAX machines. These positions will involve customer liaison, implementation of new systems and enhancement to their existing ones.

Successful applicants will be professional, self-motivating, enthusiastic towards their work, effective communicators and smart. Ideally you will have 3 years relevant experience using BASIC, BASIC+ etc. and salaries will be based on this. Ref: 01/12

Take this opportunity to discuss these and other requirements by phoning Hitchin (0462) 57141, or write to:-

Marketing & Recruitment Division
Industrial Artists Limited
21 Bancroft, Hitchin
Hertfordshire SG5 1JP. Telex: 826146

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CONTRACT ASSIGNMENTS

IBM EXPERIENCE

Progs & Anal/Progs	COBOL CICS DL/1 Home Counties	Immediate starts
Progs & Anal/Progs	PL/1 MVS Home Counties & West Country	Immediate starts
Systems Programmer	MVS Capacity Planning Central London	Immediate start
Technical Authors	Home Counties	August start
Programmer	System 34 DMAS Surrey	Immediate start
Programmers	COBOL DL/1 Easytrieve Central London	Immediate starts
Anal/Progs	COBOL IMS DB/DC Home Counties	Immediate starts
Progs & Anal/Progs	COBOL IMS DC Home Counties	August starts
Systems Programmer	CICS DL/1 South Coast	August start
Anal/Prog	Unipay South Coast	Immediate start
Programmer	Assembler MVS COBOL City	Immediate start

OTHER EXPERIENCE

Programmers	UNIX & 'C' All Areas	Immediate/ September starts
All levels	ICL ME29 COBOL IDMS All areas	July/August starts
All levels	ICL 2900 VME/B TPMS IDMS All areas	Immediate starts
Programmers	ICL System 25 Assembler Home Counties	Immediate starts
Systems Designer	Prime North	Immediate start
Progs & Anal/Progs	VAX VMS Basic Home Counties	Immediate starts
All levels	VAX COBOL Home Counties	Immediate starts
Systems Engineers	PDP or VAX Coral South Coast	Immediate starts
Prog/Designers	Z80 Assembler Graphics Home Counties	Immediate

OVERSEAS CONTRACTS

All levels	Videotext experience Australia	Ongoing requirement
Anal/Prog	Arbat Aims America	August Start

SPAN COMPUTER CONTRACTS — A SPAN GROUP COMPANY

43-44 GREAT WINDMILL STREET,
LONDON W1V 7PA.
TELEPHONE 01-734 7394 24 HOUR ANSWERPHONE

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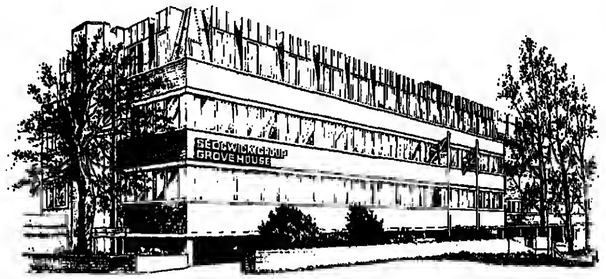
YOUR CHANCE TO...

Sedgwick

Sedgwick are the leading UK multinational broking group operating worldwide, handling insurance business orginating from 108 countries. Some of the worlds largest and most complex projects in aerospace, oil exploration, nuclear energy and construction, involving expenditure running into billions, rely upon advice and service from a firm like Sedgwick.

Sedgwick are justifiably proud of the location of their offices in Witham, right in the heart of the Essex countryside. Apart from fresh air and open space, the area offers good low-cost housing, plus excellent road and rail links with London. The Witham complex offers a spacious and carefully planned working environment, utilising the latest office technology. In addition to this there are free restaurant facilities, free life assurance, excellent pension scheme and an active sports and social club.



Following breakthroughs in the field of integrated text and data processing, utilising a range of IBM 8100 hardware, a significant upgrade and expansion in hardware, software and information processing techniques is now taking place. The current line-up of twin IBM 3032's and 4341's will soon be augmented by the arrival of their first IBM 3083. Large on-line database developments are already underway. To maintain this impressive record, the company offers excellent training facilities, so you too can become part of Sedgwick's success.

SYSTEMS ANALYSTS AT ALL LEVELS
c£11k–14k

You will analyse user requirements, design computer based solutions, and produce specifications to detailed design level.

You will have from 2-4 years analysis experience, a programming background and ideally a knowledge of T/P systems. Experience of DL/1, CICS or UFO would also be advantageous.

PROGRAMMERS AT ALL LEVELS
c£8k–12k

You will write, amend and maintain programs from program specifications and code and test programs as necessary. Lead programmers are also required to design, write and amend programs and supervise a small team.

Your experience includes one or more of the following: Assembler, COBOL, CICS, UFO, T/P systems or DL/1 and also IBM mainframe or 8100 hardware.

ANALYST/ PROGRAMMERS
c£10k

You will work with users to define requirements and assist in development with high level/interactive programming languages.

Necessary experience includes COBOL programming and the ability to communicate at all levels. Knowledge of SAS or CA-EARL would also be advantageous.

DATABASE ADMINISTRATOR
c£15k

A new area of responsibility is to be created to assist with the introduction of major new database systems using CICS–DL/1, within the technical support group.

This challenging role will include the audit of data analysis, database and transaction design and the management of Data Dictionary facilities. The successful applicant will be expected to bring initiative to the future development of the department.

Experience ideally includes systems analysis in a CICS–DL/1 or IMS environment, coupled with an interest in the technical aspects of database systems plus the ability to operate at a senior level.

To register your interest in this challenging position or simply to obtain more information, please telephone Barbara Basquill on 01-734 7394 (office hours), or on 0787-237116 (evenings and weekends) or send your C.V. to the address below.

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WARWICK WOODWARD — A SPAN GROUP COMPANY

43-44 GREAT WINDMILL STREET, LONDON W1V 7PA
TELEPHONE: **01-734 7394** 24 HOUR ANSWERPHONE

Please send me more information on Sedgwick
Name:
Address:
Telephone:
Present Position:

Sedgwick are the leading UK multinational broking group operating worldwide, handling insurance business originating from 108 countries. Some of the world's largest and most complex projects in aerospace, oil exploration, nuclear energy and construction, involving expenditure running into billions, rely upon advice and service from a firm like Sedgwick.

Following breakthroughs in the field of integrated text and data processing, utilising a range of IBM 8100 hardware, a significant upgrade and expansion in hardware, software and information processing techniques is now taking place. The current line-up of twin IBM 3032's and 4341's will soon be augmented by the arrival of their first IBM 3083. Large on-line database developments are already underway.

Sedgwick

MANAGEMENT AT ITS BEST

c.£16,500

Due to internal promotion, Sedgwick now wish to recruit a **Project Manager** to oversee the running of 2 large teams in the development and maintenance of systems within specific areas of the business cycle.

With approximately 20 development staff (including Project Leaders) reporting to you, your motivational, managerial and organisational skills will be utilised to the full. Your responsibilities will also include recruitment of further staff, appraisals and salary reviews, as appropriate, and the preparation and control of projects with long and short term development plans. There will also be a substantial amount of senior-level user liaison.

The seniority of this position dictates that you will have spent at least 8 years in D.P., 2 of which will have been in a similar managerial position running multiple projects. You will also have experience in the use of database techniques or in distributed data processing plus the ability to communicate at all levels.

The Sedgwick D.P. Department is based in Witham, in the heart of the Essex countryside, which offers good low-cost housing, plus excellent road and rail links with London. The benefits package includes: free life assurance, free staff restaurant, contributory pension, sports and social club, etc.

To register your interest in this challenging position or simply to obtain more information, please telephone Barbara Basquill on 01-734 7394 (office hours), or on 0787-237116 (evenings and weekends) or send your C.V. to the address below.

WARWICK WOODWARD | A SPAN GROUP COMPANY

43-44 GREAT WINDMILL STREET LONDON W1V 7PA
TELEPHONE: **01-734 7394** 24 HOUR ANSWERPHONE

ANALYSTS·PROGRAMMERS TECHNICAL SPECIALISTS

Honeywell is a name associated with excellence — both in our product range and the success and professionalism of our multi-national operation.

Our continued development of sophisticated systems to meet the user needs of the future places exacting and exciting demands on all areas of our business. That's why we have a major commitment to developing superior, advanced systems within our Management Information Services Operation at Brentford, providing business systems and services within Honeywell.

Our investment in new technology creates exciting opportunities for DP professionals to join us and enjoy the variety and rewards of working with one of the world's leading computer manufacturers.

Business Systems Analysts

To be responsible for preparing feasibility studies that incorporate financial analysis and justification, together with the development of detailed design specifications for management approval. You will also have direct involvement in actual systems implementation and will play a major role in preparing educational packages and training users within Honeywell.

The need is for senior level professionals with at least 5 years' experience of commercial systems within a large company environment and an in-depth understanding of the business practices involved in a Sales/Marketing/Financial operation. Ideally degree qualified, you should have a sound working knowledge of Database, Transaction processing and time-sharing on mainframe, mini or micro-computers.

Programmer/Analysts

With an end-user orientation, having a minimum of 2 years' experience in programming COBOL, Basic, as well as utilisation of end-user facilities such as query languages and office automation systems. The ability to communicate and work well with users is essential to job success. Areas of concentration will be in Marketing, Distribution, Personnel and Finance support systems. In-depth working knowledge of Honeywell products is a definite plus.

We've invested a great deal in our own systems...

...our expansion programme means we can now offer a great deal to talented professionals

Programming Team Leaders

With around 4/5 years' programming experience, a sound knowledge of database and communications programs and the ability to supervise a small programming team. Experience in writing specifications and scheduling/monitoring projects is essential, as is the ability to guide programmers in solving technical problems as they arise.

Systems Programmers

To assume senior roles in the Technical Support Group supporting in-house computing services. Experience should include the installation of software and resolution of operational problems together with the use of optimisation and efficiency techniques on DMIV and TP. Whilst a sound knowledge of GCOS, TSS, JCL, GMAP is essential and a background in COBOL, Fortran and structured program methodology is a distinct advantage, the emphasis is on the ability to absorb a challenging technology and plan for the future.

Data Communications Network Specialists

As our sophisticated, UK-wide Data Communications Network continues to expand, we need several specialists with at least 2 years' experience of communication software and hardware facilities. It is vital that you have diagnostic skills, to enable you to resolve user problems on the network in the most timely manner. A knowledge of British Telecom current and planned future services, as well as Honeywell Data Communication products would obviously be a great advantage.

All these positions offer outstanding career opportunities with salaries of up to £14,000 p.a. for the more senior levels — matched only by the challenge and variety of a company committed to innovation and development. The prospects for rapid career development within the progressive Honeywell organisation are excellent.

So, if you can match our systems excellence with your expertise, please write with full personal and career details to Chris Hill, Assistant Personnel Manager, Honeywell Information Systems Ltd., Honeywell House, Great West Road, Brentford, Middlesex.

14620

Honeywell

SALES EXECUTIVES

SALES EXECUTIVES — MAINFRAMES
Major international mainframe manufacturer need very high calibre sales executive based North London. Salary £12k plus. Car. £30k

SALES EXECUTIVE — SYSTEMS/BUREAU
Well-established and successful systems house and bureau require sales executives based West London. Good salary. Car.

SALES EXECUTIVE — MINIS
To sell established range of minis to end users on commercial territory. Based South Herts covering North London and HC. High basic. Car. To £22k

MINI/MAINFRAME — GOV.
Experienced mini/mainframe sales executive needed by blue-chip manufacturer to sell into government area. London based. Salary circa £12k. Car. To £28k

MICRO SALES EXECUTIVES
If you are a micro sales exec. looking for high income, please contact us as we are constantly recruiting for leading distributors/manufacturers in London and Home Counties.

Plus many other excellent sales vacancies
Telephone for an appointment

SDS CONSULTANTS
COMPUTER PERSONNEL CONSULTANTS
150 Regent Street
London W1R 5FA
Tel. 01-439 8238

AFTER 6 p.m. and weekends: 0444 458804

14624

Freelancers-immediate requirements
VME, TPMS, IDMS, CICS, DL/1, SYSTEM 34, RSX, CORAL.
Challenging assignments for experienced Analysts and Programmers in North of England, Midlands, West Country and Europe.
VISIONHIRE COMMUNICATIONS LIMITED
Write with full CV to John Royle-
Langley House, Stanneylands Road, Wilmslow, Cheshire SK9 4HA.
Telephone: Wilmslow (0625) 532127. 14603

USER LINK

SENIOR PROGRAMMER IN SOUTH MANCHESTER
Programmer required for a rapidly growing company producing microcomputer systems for communicating with remote computers. The work will include Z80 assembler, Pascal programming and a knowledge of CP/M. The appointee is expected to contribute personally to the vigorous development programme and will share in the management and success of the company. Salary negotiable, depending on experience, attitude and commitment.
USERLINK SYSTEMS, 9 Brabyns Brow, Marple, Stockport, Cheshire. Tel: 061-427 5975. 14620

SOFTWARE ENGINEERS

LONDON, HOME COUNTIES, PROVINCES

£14K+BUPA++ Seven software engineers sought for NEW micro projects in control/medical applications.

£10K+++ New turn key house, ground floor opportunity for bright young commercially orientated engineer to join friendly company.

£20K+car++ Leading CAD/CAM manufacturer, 32 bit machines, offers superb opportunity to expand into marketing using your software skills.

£20K+car+++ Senior marketing opportunity for ambitious software engineer seeking career development in commercial micros.

Call Clinton on 01-543 4844

Alltronics People (Agy)

4612

COBOL in Surrey

ICL 2900 DEC/VAX Micros

Analyst/Programmers
to £11,000

This established Management Services Department is gaining an increasingly heavy volume of work from user departments and is in the process of developing new systems. These will be on a variety of hardware—ICL 2900 meinframes (under VME and DME), VAX 11/780 (VMS) end micro-computers, both stand alone and linked to the meinframes. If you have 3-5 years' experience of COBOL programming and design, gained in a VME, DME or VMS environment, these offer you the opportunity of initial training in appropriate areas and other training as your career develops. There are many benefits in addition to the salary, including assistance with removal expenses where necessary.

Senior Programmers
to £10,500

If you heve substantial experience of ICL COBOL, are a good organiser and can offer leadership skills, this position gives you the opportunity to gain supervisory experience and a knowledge of micros. Training in structured programming techniques will be given where necessary. A knowledge of BASIC could be useful.

Programmers
to £9,000

A minimum of one year's experience of ICL STRUCTURED COBOL is required for these positions, one of which will offer training in VAX 11/780 COBOL, as some applications are being converted to an on-line environment. The sports and social club is very active.

For these and other positions please contact Joan Ainsworth on 01-681 8311 or write to her at Computer Search and Selection, 6th Floor, Carolyn House, Dingwall Road, Croydon, Surrey, CR0 9XF.

Computer Search & Selection

Analyst Programmers

LONDON WC1 up to £11,801 [under review]

Computers are playing an increasingly important role in our wide ranging activities at British Gas. In fact, our network and installed capacity ranks us amongst the most advanced and sophisticated users in Europe. We have an immediate need for two Analyst Programmers, at our Holborn Headquarters in London WC1.

THE WORK
- Fortran plus Cobol and Assembler
- Timesharing, batch and real-time
- Univac1100 installations
- Scientific, engineering and information applications
- Convenient Central London location.

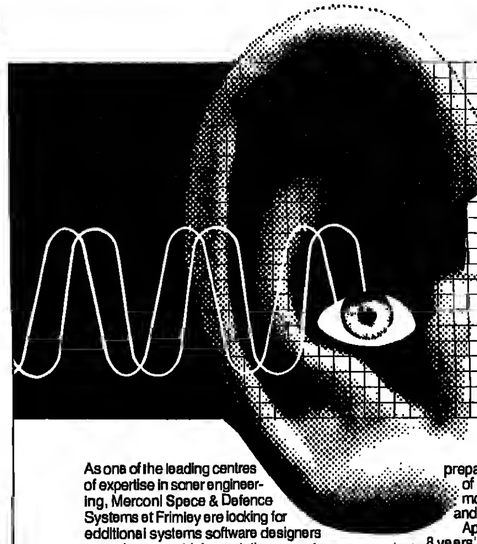
THE PEOPLE
- At least a year's programming experience
- Analysis ability
- Degree or equivalent.

THE REWARDS
- Salary in the range £10,421–£11,801 [under review]
- Excellent benefits package
- Relocation assistance, where appropriate
- Involvement in an expanding function within the energy industry.

ACTION
For further details ring Dave Taylor on 01-831 6272 ext 4245, or write, enclosing full details of experience, qualifications and age, quoting ref. PS/71690I/705/CW, to: Senior Personnel Officer (Engineering), British Gas, 59 Bryanston Street, London W1A 2AZ.

BRITISH GAS

(4580)



SOUND INTO VISION

Software Designers

As one of the leading centres of expertise in sonar engineering, Marconi Space & Defence Systems at Frimley are looking for additional systems software designers to work on new high resolution scanning sonar projects. The main tasks will be the preparation and writing of system software, structuring of software, testing and evaluation of program modules, task building and integration of hardware and software, and software testing.

Applicants must be numerate graduates with at least 8 years' experience of real-time system software design including debugging, problem-solving and evaluation. A good knowledge of Intel 8086 and its Operating Systems, RMX 86, CORAL 66 and Assembler is essential.

Salaries for these key positions will be extremely competitive and accompanied by an attractive range of benefits.

If you feel that your experience and skills can lead us into a technologically better tomorrow, 'phone Richard Earnshaw on Camberley 62252, Ext. 347 for an informal discussion.

Alternatively, send your c.v. to Eric Coburn, Personnel Department, Marconi Space & Defence Systems Limited, Chobham Road, Frimley, Camberley, Surrey GU16 5PE.

Marconi
Space & Defence Systems

Marconi

EAGLE COMPUTING SYSTEMS

SYSTEM ANALYST/ PROGRAMMER

With extensive experience on IBM System 3/32/34/36/38 RPG 11/111. Competitive salary. Paid overtime, 4 weeks paid holiday, family BUPA, expenses, company car, and bonus scheme.

OPERATIONS CONTROLLER

For a client in Bromsgrove, Worcestershire with an IBM System 34. They require a person with sound business experience and a working knowledge of operating the System 34. Familiarity of SDA and DFU is essential and any RPG 11 would be beneficial.

Duties will include job scheduling, report distribution, producing extra reports and enquiries via DFU and creating menus.

Salary negotiable.

Contact Steve Eagle
Eagle Computing Systems
139 Sarehole Road
Hall Green, Birmingham B28 8EE
or Telephone: 021 778 5744.

(4582)

UNITED MEDICAL SCHOOLS OF GUY'S AND ST THOMAS'S HOSPITALS

JUNIOR PROGRAMMER

(Grade A) required in the Medical School Computer Centre at Guy's. Duties include advice to staff and students on the use of the University of London Computer network, writing programs and assisting with introduction of microprocessors in departments. Experience of Fortran and use of mainframe computer essential. Salary on scale £4,084–£5,018 (under review) plus £1,119 London Weighting.

For further details telephone 01-407 7600, ext. 3442. Apply in writing, stating age and giving details of experience, to the Deputy Secretary, United Medical Schools, Guy's Hospital Medical School, London Bridge SE1 9RT, quoting Ref. J.P.

(4644)

UNIVERSITY COLLEGE LONDON

Department of Geography

PROGRAMMER

Applications invited for the post of PROGRAMMER in the newly-established Bloomsbury Remote Sensing Facility.

The appointee will be responsible for program development in image processing and graphics and, jointly with a senior programmer, for maintaining a service to users.

Knowledge of FORTRAN essential, and of VAX systems or graphics an advantage.

Salary from £7,896 to £8,376 (inc. London Weighting).

Further information from and applications to W. J. Campbell, 26 Bedford Way, London WC1. Applications by 29 July, 1983.

(4631)

COMPUTER SERVICES MANAGER

C. £18,000 plus car

Our client offers an exceptional opportunity for a person with about 12 years' experience to manage its established ICL-based data processing department and to implement and develop on-line information systems.

Reporting to the administration director, the successful candidate will be expected to provide services within a head office environment based in Surrey and technical support to the subsidiary companies.

Aged between 35 and 45 years, he/she will be a self starter, able to communicate to all levels of management and will take responsibility for the effective implementation of a corporate computing policy.

Other benefits include free BUPA cover, five weeks' holiday and a contributory pension scheme.

If you feel you have the qualities we are looking for, please contact:

(4649)

TLP

Telephone or write with your CV to:

Nic Poland,
TLP Leon House, High Street,
CROYDON, Surrey, CR9 3NH
Tel: 01-686 5656

Systems Designer

Central London

The Distillers Company (Home Services) Limited provides a centralised service covering the receipt and processing of orders, customer invoicing, accounting, statistical analysis and reporting for all Distillers Company potable products sold in the United Kingdom.

The Company's operations are carried out on two Honeywell 64/DPS 2 mainframe computers and a Level 6 minicomputer.

The Company is currently embarking on a development programme to achieve a total on-line integrated system which envisages a data communications network linked to a number of distribution depots and warehouses and to other Group subsidiary companies.

The Systems Designer will be responsible to the Systems Manager for the design and development of computer-based systems; and for providing advisory and training services to user areas. He or she will also be required to evaluate and report on new technical developments in computer hardware and software, and carry out associated feasibility studies.

Applicants should be aged about 30, and hold an HND in Data Processing, Business Studies or a similar related qualification and have had at least 6 years' experience in a commercial environment. This previous experience should include systems analysis and design, programming (preferably in Cobol), and data communications systems.

In addition to a salary commensurate with experience, the appointment offers a non-contributory pension scheme with life assurance and BUPA membership after a qualifying period, 23 days' annual holiday and relocation expenses, where appropriate.

Please write or telephone for an application form by July 29th 1983 to

G.M. Temple,
The Distillers Company (Home Services) Limited,
49/50 Poland Street, London W1V 3DF
Tel: 01-734 7272.

(4625)

CONSULTANT/ANALYST

LONDON **£11,000-£15,000**

Our Client is a small but well established Software House with a number of prestigious companies using their services. Their packages, based on the PICK operating system, are widely used in both the International and home markets. To maintain and increase their high standards of operation they wish to appoint a Consultant/Analyst.

Applicants should have a sound DP background with exposure to either accounting, sales or manufacturing systems and have feasibility study and project management experience. They will probably be aged between 25 and 35 years, educated to degree level and be non-smokers. As there will be a high degree of client contact candidates must be professional in appearance and attitude. They must also be able to advise customers at all levels and present the results clearly and concisely.

In return our client offers an interesting and rewarding position within a friendly but professional team specialising in the PICK operating system and using fifth generation techniques. This is an excellent career opportunity to gain experience in a wide cross section of business applications in a pleasant and flexible working environment. For further details please contact Mike Harmer.

(4563)

Apex Computer Recruitment Ltd.

404 4821

Apex

London Office:
59 Grays Inn Road,
London WC1X 8TL.
Tel: 01-404 4821.

Brussels Office:
Rue Gatti de Gamond,
24, Ucclo 1180 Brussels
Tel: 010 322 377 4193.

TO ADVERTISE IN JOB SPOT PHONE JAMES ATTEWELL 01-567 5501

TRW

ANALYST/ PROGRAMMER

£EXCELLENT

TRW Carr Limited is a major UK manufacturing division of a large American corporation employing over 450 personnel in this country. The company are on the threshold of major software developments and a significant hardware upgrade which is currently based on an IBM 4331. A vacancy now exists for an **Analyst/Programmer** to assume a senior role within the department and we are seeking experience in **any** of any of the following areas:

- ★ **IBM MAINFRAMES**
- ★ **COBOL**
- ★ **MANUFACTURING SYSTEMS**
- ★ **DOS/VSE, CICS, DLI**

In return TRW Carr offer competitive salaries and a comprehensive benefits package including annual bonus and company membership to BUPA.

LOCATION: NOTTINGHAMSHIRE **JA322/1**

RHM

PROGRAMMER/ ANALYST

c.£9,000

RHM Foods Limited is a successful company within the Grocery Division of the Ranks Hovis McDougall Group, manufacturing and distributing a wide range of well-known branded grocery products. Recent expansion within our Management Services Department has created a vacancy for a **Programmer/Analyst** with sound Cobol programming skills gained on mainframes in a commercial environment. The position involves co-ordinating the work of a small programming team and contributing to detailed systems design. The initial task will be the re-development of an order processing/stock online system.
Our hardware is based on two ICL 2966s which support a national terminal network covering Production, Distribution, Sales, Accounting and Personnel systems. We are currently converting to VME 2900 from System 4 DME. In addition to an attractive salary and benefits package we offer good career prospects in a successful and dynamic business.

LOCATION: NW LONDON **JA322/2**

BARIC

DATA CONTROLLERS

to £8,200

Baric Computing Services is an established company owned by ICL and Barclay's Bank providing a comprehensive range of services to industry and commerce. A recently expanded facilities management agreement has created a requirement for a number of **Data Controllers**.
These positions will provide a vital interface between the client's management and computer operations, therefore candidates must be able to represent Baric to all levels of users. Duties will include checking job set-ups and outputs, disseminating output, liaising with user management to review processing priorities, maintaining an accurate delay/fault Production Incident Report and controlling the movements of all magnetic media outside the secure area.
As part of an established group of companies Baric offer numerous opportunities for career development, excellent salaries and comprehensive conditions of employment.

LOCATION: LONDON **JA322/3**

dp

Action..
ring or send the coupon to
D.P. Recruitment Services Ltd.
Freepost, London W5 2ST
01-567 5501

Name....................
Address....................
Home tel.......... Work tel..........
I am interested in Ref ....

(4576)

The IBM SYSTEM 34/36/38 Recruitment Specialists

PROGRAMMERS/ ANALYST PROGRAMMERS

Is Your IBM System 38 Exp. Worth a Mortgage Subsidy?

At Financial Insurance they can offer you this . . . plus responsibility and excellent long term prospects for career progression.

To maintain their outstanding reputation for service additional personnel are being recruited to handle the increase in business.

Based in London you will be joining an established, successful and rapidly expanding organisation who are using mass marketing techniques, involving life insurance and related products, primarily credit life, credit accident and sickness through banks, building societies, finance companies and similar financial institutions.

On site they have both System 34 and System 38. Your immediate involvement will be with System 38 and people are needed who would like to develop their knowledge in this area.

The D.P. department is a compact and friendly site with long term expansion plans. Joining now will give you a great deal of ground floor involvement, plus the advantage of highly competitive salaries suited to your ability and experience.

Please telephone for an early informal discussion to: Richard Milsum on 01-354 1055 during office hours or on 01-958 2553 in the evenings and weekends. Alternatively please send full details to me at:

(4563)

MARCH COMPUTER RECRUITMENT
1 NOEL ROAD, LONDON N1 8HQ
01-354 1055

CONTRACT SALES
NORTH WEST

Position: **Contract Salesperson**
Income: **Negotiable Package – £15,000+**
Office Base: **Altrincham, Cheshire**

We need an ADDITIONAL SALESPERSON to join us in our ALTRINCHAM office, to assist us in further expanding our business in the North .... but NOT JUST ANOTHER SALESPERSON.
We are looking for a background in SALES, preferably contract consultancy or permanent recruitment, with the personality and AMBITION to fully participate in the GROWTH and SUCCESS of the company.

Reply to:
R. Thomson, Regional Manager – Altrincham (061-928 8302).
D. V. Gibbons, Director – London.

dp SUPPORT SERVICES
A member of the DP Support Services Group
"We look forward to hearing from you."
01-434 2042
7 Swallow Street, London. W1R 7HD

(4632)

SUPERB CAREER OPPORTUNITIES FOR ANALYST/PROGRAMMERS

SAUDI ARABIA
£18,000 to £24,000 After Tax

The Arabian American Oil Company is the largest oil producing company in the world and as such can offer unparalleled opportunities and challenges to qualified professionals. Such is their commitment to Data processing, they are reputed to have one of the world's widest range of computer applications systems, and are still expanding in all areas. Currently their hardware consists of 3033's, 3081's and a wide range of mini's and micro computers and will shortly be supplemented by further State-Of-The-Art equipment. However, their huge investment in computerisation cannot simply be measured in terms of hardware alone, 'man centuries' of development effort will be invested in a diversified range of applications such as human resources, materials and the Transpeninsular Natural Gas Liquids Pipeline System.

As a result they are now urgently looking to recruit Analyst/Programmers with at least 3 years' experience of PL/1, OS JCL or CMS, a knowledge of IMS would also be an advantage.

Selected candidates, who should be educated to Degree level, will be offered an indefinite term contract, initially on single status, and a range of benefits that can be compared with the best in the Middle East.

Please contact Caroline Tee for an application form and further information on: 01-723 4053 or write to: Comcap Resources Limited, 26 Chilworth Street, London W2 6DT.

The need for computer personnel is on-going and if you are not available at present, you should register now for future opportunities.

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Analyst/ Programmer
As Site Controller

London **c. £12,000**

Our client, a subsidiary of a major British company with an international reputation in specialist engineering and manufacturing, requires to appoint an Analyst/Programmer as Site Controller at a small self-contained installation.

The person appointed will undertake on-site systems development, programming and user liaison, and will additionally provide support to the operations function. Reporting to a senior manager in the central Computer Services Department, the job holder will be required to provide a reliable and effective service to local management, and will be supported where appropriate by Computer Services personnel. This is an exceptional opportunity for an ambitious DP professional to achieve career progression, and to acquire management related skills.

Candidates should have recent experience in an ICL environment, with proven analysis ability gained ideally on Financial Applications, and with evidence of a strong background in programming. Self-motivation, and determination to achieve objectives, are essential qualities for this position, and applicants should be able to work on their own initiative or as part of a team.

The attractive remuneration package includes excellent salary, bonus, contributory pension and the usual large company benefits. Relocation expenses will be reimbursed where appropriate.

To apply, please write or telephone for an application form, to JOHN MERCER, at the address below, quoting reference NGW73. Applications, which will be treated in strictest confidence, are invited from either sex.

(4567)

BIS Applied Systems Limited
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The successful candidate will be well versed in software quality assurance, have sound software systems and programming experience and proven interpersonal communications skills. He will also have software test plan development and execution experience with a software functional specification and design review background.

In return you will enjoy a challenging project leader position with a team of analysts, and the opportunity to grow with this continually expanding group.

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Cray supercomputers in Paris provide London bureau SIA with immense computing power.

Market for skills lifts

Philip Hunter finds an area where specialists are in demand

THERE never has been a recession if your skills are rare or popular, for example, in IBM CICS, or software engineering. It is in specialist areas like these that there has been a pronounced lift in the market during the first half of this year.

One agency reports that salaries for software engineers have risen by 15% in the last six months. Software houses in general are recruiting more, and in particular, opportunities are springing up in microcomputer applications. The number of software houses specialising in micros has grown dramatically in the last two years.

But the picture is one of two distinct groups. Specialist people, especially in real-time programming, are precious as diamond. But beginners, particularly those without degrees, are still finding it a struggle to get their feet in the market.

One agency, Comshare, recently received 400 replies to an advertisement for programmers and senior programmers with degrees aged 21 to 30, with salaries of up to £13,000. There were only seven vacancies.

The surplus of junior people is reflected in salaries, which are at best just about keeping pace with inflation, according to most of the agencies and bureaux. A typical programmer with a year's experience can now expect to earn about £7,500.

The market for programmers of Cobol, still by far the most popular language for commercial data processing, is picking up, according to most agencies.

"The market is more buoyant and there are many more jobs than 12 months ago," says Nell Williams, head of permanent recruitment for Knight Computer Services.

The emphasis, he says, is more and more on real-time and IBM CICS.

London-based bureau SIA specialises in technical applications, and is holding its ground in the market. Staff turnover has speeded up as the recession has eased, according to the bureau's Elaine Priestley.

SIA offers users immense computing power, with access to Cray supercomputers at the company's parent company in Paris, and an IBM 9032, as well as Control Data mainframes in London.

Competition is intense between bureaux on the commercial side. Some are offering to nurse their customers toward in-house computing by allowing them to keep the bureau service going just as long as necessary. The bureaux then hope to benefit by providing consultancy and software for in-house use.

But this is not the gospel according to Applied Computer Technique (ACT), which has a commercial bureau division that is holding up nicely and is hoping to recruit eight programmers and analysts.

ACT's view is that bureaux that offer to help customers wean themselves to an in-house service are merely erecting their own gallows. What bureaux should be doing is following the market closely and cashing in with fresh services as demand dictates.

ACT says it has picked up 50 new customers this year by offering high quality software to handle the government's new statutory sick pay scheme.

The big pedlars of real-time software, companies like GEC Marconi that have a large captive market in defence applications, are for ever moaning about the shortage of skilled programmers. Such companies provide more openings than many for graduates, as they believe that the only way to conquer the staff shortage is by training people up from scratch.

Marconi took 29 graduates last year. Other companies with real-time needs, such as Logica, also have extensive graduate recruitment schemes.

But according to Beryl McLaren of recruitment agency Jupiter, the shortage of real-time people is more apparent than real.

"Marconi finds a shortage because it wants the best people and won't pay the salaries," she says. "There are a lot of really good people around."

There are good opportunities for programmers skilled with fourth generation languages, sometimes called non-procedural languages. Tangent is at present recruiting for its Focus division, and finding people hard to get. "We are always looking for expertise," says Phil Clarke, the company's head of recruitment.

However, while the fourth generation matures, two new members of the third generation of languages are offering some job opportunities. Advertisements for people to program in Ada and Chill are beginning to appear in the classified pages of *Computer Weekly*.

Advanced communications systems design & development

How do we keep innovators on their toes?

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If you'd like to talk about our work and how your experience could match our requirements, phone Hilary Baldock on: 01-636 0139 any time between 9.30am and 9.00pm (July 14, 15, 18 & 19).

Alternetively, write with full CV to:- Anne Bowerman, Personnel, Scicon Limited, 49 Berners Street, London W1P 4AQ.

Interviews can be arranged outside office hours.

Scicon

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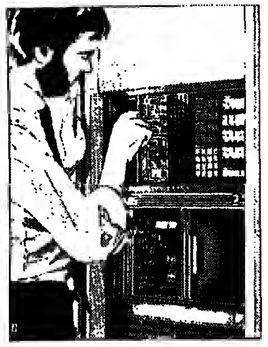

If we can shorten the distance between worldwide locations, we know we can convince you that it's not far to Watford.

Developments in communications have made the world a much smaller place. It is now easy to pick up a phone in London and dial direct to Hong Kong. CASE takes this facility one step further. By the end of 1983, we will be selling a data network which enables people to communicate across the world, via their data terminals, as easily as if they were using the phone.

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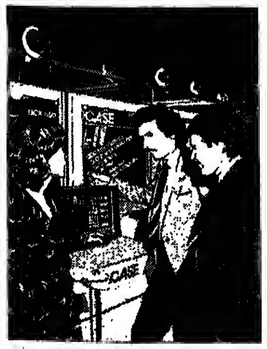

Improvements in road and rail transport have made Watford a very accessible location -only approx. 35 minutes from London. This, plus the superb salaries and career prospects, a progressive environment and excellent working conditions, should be enough to convince you that CASE is the company to join. But, if you have any doubts, we're certain they'll be dispelled once you know more about our company, and we've had a chance to answer your questions. For this reason, we have arranged the following special occasions for informal discussion:

Our R&D function has a continuing need for Real Time Programmers, Microprocessor Design Engineers and Technologists to advance their careers in the following specialisations:

Digital Voice
Statistical Multiplexing
Communication Processors
Network Management Systems
Technology Studies
Mainframe Protocols
X25,PAD,X121
Local Area Networks

Open Interviews

Come along to the **Cotswold Room, Selfridge Hotel, Orchard Street, London W1 on Tuesday 19th July, between 4.00pm and 8.00pm** for a drink, a bite to eat, and an informal discussion with professionals who speak your language. They'll tell you what it's like to work for CASE, let you know about the career opportunities we have to offer, and provide you with literature to take away and read.

Make it an appointment to keep in your diary.

Phone (0923) 33500

Call CASE direct on this number between 9.00am and 9.00pm on Monday 18th or Tuesday 19th July; one of our data communications specialists will be waiting to speak to you.

Or, if you're in the Watford area at these times, why not drop into our offices in Watford Business Park for an informal chat and a chance to look around.

If you would like more information, but it's not convenient for you to come along to our Open Evening and you're unable to contact us during our phone-in, write to, or telephone during working hours, Maureen Greaves, Personnel Manager,

Computer & Systems Engineering PLC., Caxton Way, Watford Business Park, Watford, Hertfordshire, WD1 8XH. Tel: Watford 33500.

CASE

logistix Logistix Recruitment Limited
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

UNIX Programming Mgr

Cambridge: Salaries to £14K

Our Clients have an urgent requirement for a Programming Manager to take charge of a development team currently engaged on a UNIX-based system. Candidates should have a good Honours degree or M.Sc. and at least five years' subsequent industrial experience. Hands-on experience of Assembler and high-level structured languages is required as is a knowledge of the internals of UNIX or CP/M. As well as the ability to manage the development team, the successful applicant will also be required to directly assist in solving software problems. Generous relocation terms are available as part of a comprehensive package which includes pension and life assurance. Ref: L/26/A

Office Automation

Berks/Hants: Salaries to £16K

A Manufacturer and Supplier of hardware and turnkey systems has a number of outstanding career opportunities for Systems Engineers and Project Leaders. Your academic background should include a good class B.Sc. Honours degree in a numerate subject augmented by two years' software system engineering experience in an environment where office automation projects are under development. In particular your software engineering and systems skills must have been acquired within one or more of the following technical areas:- man/machine interfaces (ergonomics); object based system engineering (pattern and character recognition); and word processing (electronic mail/filing; single and multi-station software integration). Your primary programming skills should include PASCAL or 'C', whilst a supplementary knowledge of an Assembler is a useful asset.

Ref: L/26/B

Communications Consultants

Inner London: Salaries to £18K

A highly regarded Systems House is seeking a number of Communications Consultants for its Central London Head-quarters. Successful candidates can expect to join project teams undertaking development work utilising the most advanced techniques available and they will, therefore, considerably enhance their skills. Ideally, applicants should be aged 28-35 years and be educated to at least B.Sc. standard in Computer Science or a related discipline.

You will be expected to possess a thorough knowledge of at least two of the following:-

- Communications Protocols e.g. X-25
- ISO standards
- Office Automation Systems and Networking techniques
- Market Development
- Systems Design and Consultancy
- Familiarity with UNIX or a look-alike product

A sound software development back-ground is essential and will preferably have been gained with a computer manufacturer or Systems and Software House. Good personal communication skills are also important since successful candidates will be expected to make presentations to clients and prepare reports and recommendations to exacting deadlines.

Ref: AS/2

RSX/VMS Progs

London & H. Counties: Salaries to £13K

The Communications Division of a leading Systems Supplier and Consultancy is currently seeking additional Systems Programmers. Suitable applicants should be graduates with a minimum of two years' software or systems design experience within a PDP/RSX-11M or VAX/VMS environment. It is essential that you should offer fluency in Assembler and that you are fully familiar with the internals of RSX-11M or VMS. Additional knowledge of a high level language e.g. FORTRAN or PASCAL would be a distinct advantage, as would experience of working within a data communications or distributed processing environment. Applicants who demonstrate management potential or those who already have some project leading experience will be considered for more senior positions within the project teams.

Ref: L/26/C

Systems Software

Herts/Beds: Salaries to £14K

The Applied Systems Division of a leading Systems House and Consultancy requires additional Systems Software Specialists from Programmer to Senior Designer level. All applicants should be educated to B.Sc. standard and have at least two years' experience within a real-time scientific mini-computer or microprocessor environment. It is essential that you offer fluency in an Assembler and one or more of CORAL, PASCAL, BCPL or 'C'. For the senior positions, applicants should have experience in the specification, design and implementation of systems software. In particular, knowledge of language systems, interface handlers, X-25 protocolling techniques or local/wide area networks will be highly desirable. Ref: L/26/D

Operational Research

London: Salary to £13.5K

A number of Operational Analysts are required by this London-based Consultancy. Academically, you should hold at least a first or second class B.Sc. Degree in Mathematics, Physics or Statistics. An M.Sc. or Ph.D. in Operational Research is a distinct advantage and will certainly reflect in the salary offered. Past work experience should include one or more of the following areas:- war gaming and scenario studies, mathematical programming and analytical modelling, navigation systems assessments, reliability studies and data reduction. An important feature of these positions is the ability to communicate software and O.R. techniques to non-technically minded personnel. There will also be a degree of travel to clients' sites.

Ref: L/26/E

(4611)

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calma USA

CONSULTING APPLICATIONS MANAGER

An experienced manager is required to manage a small group of multi-disciplined CAD/CAM Specialists.

The successful candidate is likely to have gained considerable experience as a practising mechanical engineer before moving into the area of computing and will now be involved in the application of CAD/CAM to a wide range of mechanical processes.

Preferred age group 35-45.

This position qualifies for a company car, and the usual benefits associated with a position at this level.

CAD APPLICATIONS SPECIALISTS

Application Specialists at both senior and junior level are required for our consulting end applications group. These staff provide technical support to our customers and sales teams. Their responsibilities include acting as a focal point for technical information between our parent in the USA and Europa, together with the provision of market intelligence and liaison with Marketing/Research and Development in the U.S.A.

We are particularly interested in hearing from experienced CAD application engineers operating in the following areas:

(1) **Integrated circuit design.**
(2) **Printed circuit board layout.**
(3) **Mechanical engineering design (finite element analysis, surfaces and solids).**
(4) **Petro chemical applications such as piping, and three-dimensional schematics.**

A generous salary and excellent conditions of work will be available to the successful applicants.

Please contact: Mr W. D. N. Davies, Calma Company, Beech House, 373/399 London Road, Camberley, Surrey GU15 2HR. Telephone: (0276) 682021

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calma USA

SENIOR SOFTWARE ENGINEER (OPERATING SYSTEMS)

The person will be responsible for giving advice and support to Calma personnel and customers across the range of Calma computer systems. Experience in the use of VMS is essential. A minimum of four years' experience of the use of computers in an engineering environment is required. Experience in one or more of the following areas would be an advantage.

Communications: CAD/CAM; Numerical Control; Finite Element Modelling; Data Base Design and Implementation.

SENIOR SOFTWARE ENGINEER (COMMUNICATIONS)

The person will be responsible for giving advice and support to Calma personnel and customers on the communications software available to link Calma systems, both to each other and to other mainframe and mini computers. A minimum of four years' experience of the use of computers in an engineering environment is required.

Salary is negotiable according to experience and benefits include free membership of BUPA, a contributory pension scheme and over four weeks annual leave.

Please contact Robin Mills for an application form:

Calma Company, Beech House, 373/399 London Road, Camberley, Surrey GU15 3HR. Telephone: (0276) 682021

(4633)

PL/1 CONTRACTS
£20K TO £23K

10 Analyst/Programmers are required for six months contracts. A minimum of three years' experience in the following skills are essential:

★ IBM MAINFRAME ★ PL/1 ★ IMS DB/DC ★ TSO/SPF

START DATE: FROM JULY LOCATION: SOUTH COAST OF ENGLAND

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★ THREE YEARS + IN CONDUCTING INDUSTRIAL TRAINING, CURRICULUM DESIGN AND WRITING O.P. INSTRUCTIONAL MATERIAL.
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ONE YEAR CONTRACTS In Saudi Arabia for Analyst/ Programmers.

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★ IBM MAINFRAMES ★ PL/1 ★ IMS DB/DC ★ TSO/SPF
★ STRUCTURED PROGRAMMING TECHNIQUES.

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For further details please RING NOW and ask for Roselba (Roz) Da Lisi on:

01-222 6722

COMPUTASTAFF

Livingstone House, 11 Carteret Street, London SW1H 9DJ. 01-222 6722 (20 lines) Telex 894364

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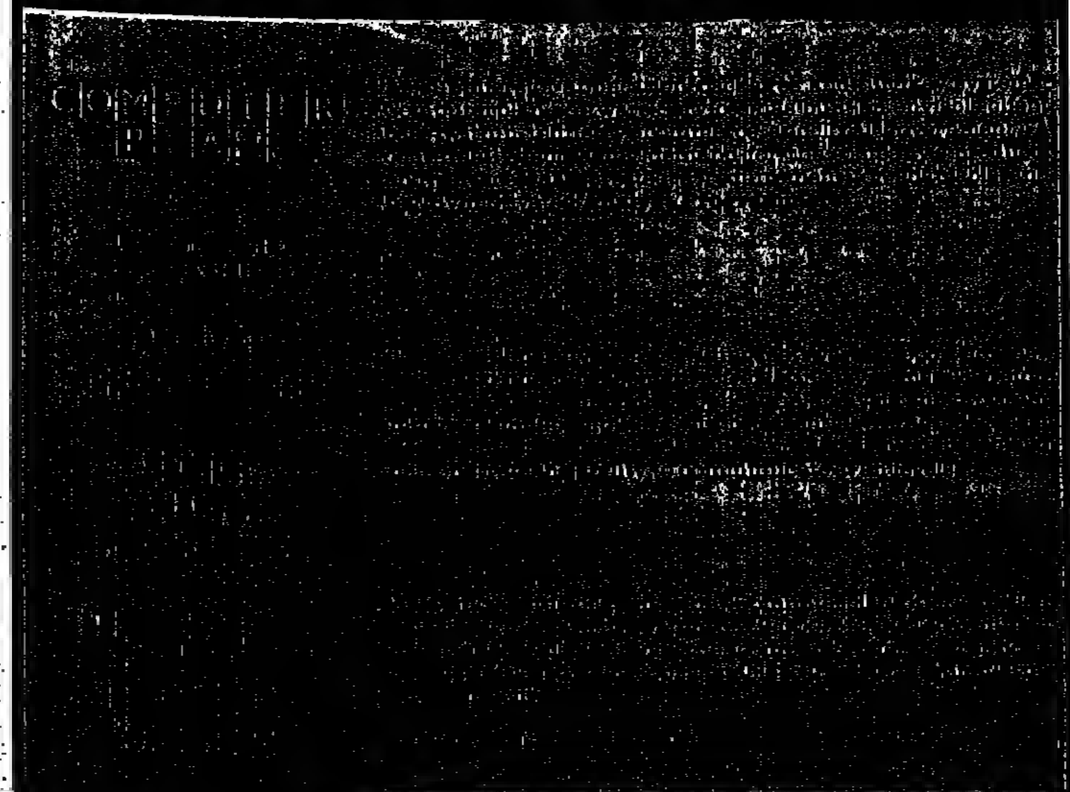

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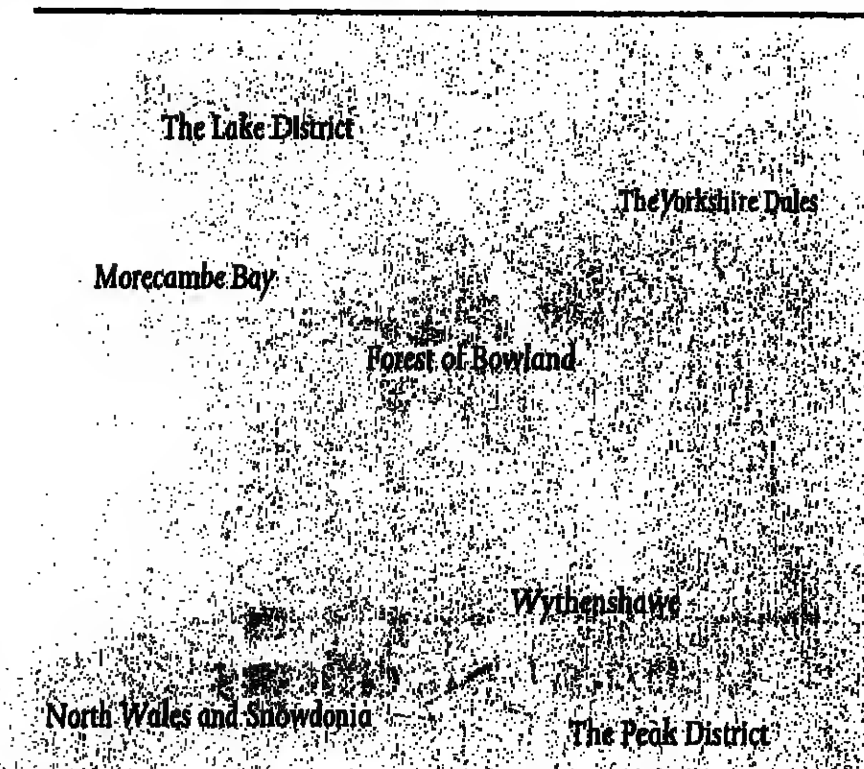


SOUTH MANCHESTER

Ferranti Computer Systems, Europe's leading supplier of real-time equipment for industrial, commercial and military applications, has recently announced record turnover and profit figures for the financial year 1982/83. Located close to the countryside of rural Cheshire, yet conveniently near to Manchester International Airport and the national motorway network, the **Wythenshawe Division** designs and produces systems for **commercial** applications.

It is in the supply of micro processor based products for industrial, commercial and office use that the highest rate of growth is being achieved, notably in the areas of communications and information systems. These include private and public message switching; network architectures; telex management and teletex; data handling; transport applications; and more increasingly the design and support of office products.

Excellent opportunities now exist for suitably qualified staff to join project groups designing and implementing an exciting product range. We particularly wish to recruit professionals with the following skills:–

Systems Designers and Consultants £8k-14k + bonus

Successful candidates are likely to have several years experience of real-time system development and knowledge in the following areas is particularly useful:–

★ Networks and International standards ★ Office Products Development
★ Communications protocols ★ Hospital laboratory systems
★ Traffic control and Airport Information

Programmers £7k-9k + bonus

With a minimum 12 months real-time programming experience preferably in CORAL 66 or PASCAL, although FORTRAN and CIS-COBOL will also be considered.

Benefits

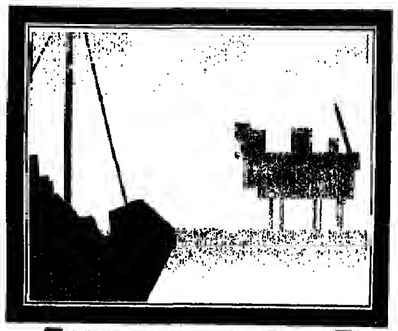
★ Live and work close to green countryside yet within easy access to excellent recreational facilities of Manchester and the North West.
★ Progress in a profitable division of a major British group
★ Variety of a systems house with the security of a computer manufacturer
★ Work on major projects from start to finish
★ Good salary plus quarterly bonus plus overtime at premium rates
★ Where appropriate, excellent relocation assistance

FERRANTI
Selling technology

For further details contact **Graham Pepper** on **061-491 1666** during office hours or **Adlington (0257) 480291** evenings and weekends. Alternatively write to him at Computer People North (Freepost), Sovereign House, Stockport Road, Cheadle, Cheshire SK8 2YD.

Interviews can be arranged in Manchester, Birmingham, London or Croydon.

Computer People North



A tale of two cities.

MANCHESTER & ABERDEEN

Real-time Process Management.

The Wythenshawe Division of Ferranti Computer Systems is a market leader in the specialised area of real-time computer systems for industrial process control and monitoring. Based on the highly successful ARGUS 700 hardware and PMS (Process Management System) software, Ferranti systems are installed in a wide variety of industries e.g. off-shore applications, both in oil and gas production; petrochemicals; steel production automation; food processing; electricity, gas and water industries; power station control; T.V. transmitter monitoring and road tunnel environment control.

Continued success in these industries means that opportunities now exist for suitably qualified staff to join Project Groups designing and implementing an expanding range of specialist products. We particularly wish to recruit professionals with the following skills:-

Systems Designers-£8k-£12·5k+bonus.

Successful candidates are likely to have a minimum of three years experience of real-time system development in any of the above industries and knowledge in the following areas is particularly useful:-

- ★ Oil Exploration and Production industry.
- ★ Telemetry/SCADA systems.
- ★ Sequence/continuous control.
- ★ Display systems.

Programmers-£7k-£9k+bonus.

With a minimum of twelve months real-time programming preferably in CORAL 66, although similar high level languages will be considered.

FERRANTI
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Benefits.

In return you will have the opportunity to work on major projects from start to finish and enjoy the variety of working for a systems house together with the security of a major computer manufacturer. You will be rewarded with a good salary, together with a quarterly bonus and the opportunity to earn overtime at premium rates. For Aberdeen appointments an additional allowance is payable and where appropriate generous relocation will be offered to either location.

For further details contact **GRAHAM PEPPER** on **061-491 1666** during office hours or **Adlington (0257) 480291** evenings and weekends. Alternatively write to him at Computer People North (FREEPOST) Sovereign House, Stockport Road, Cheadle, Cheshire SK8 2YD.

Interviews can be arranged in Manchester, Birmingham, London or Croydon.

Computer People North

your appointments register

Programmers

NCR/IBM/COBOL	to £15K	
Insurance Banking	London · H. Counties · N. Eng.	
COBOL/PL1/OS/CICS/IMS	to £13K	
Commercial	H. Counties · Midlands · Manchester	
PLZ/COBOL/MINIS	to £12K	
Commercial	London	
HONEYWELL	to £12K	
Systems Programming experience	Middlesex/ London	
DATA GENERAL ECLIPSE	to £11K	
Cobol	Leicestershire	
SYSTEMS 34/36/38/RPG2	to £12K	
Insurance/Commercial	London/Home Counties	
IBM	to £16K	
System exp.	Essex	
BASIC	to £11K	
Mini Computers	London	
IBM/UNIVAC/COBOL	to £12K	
On-line/Database	Surrey	
NCR 8200	to £14K	
Financial	SW LONDON	

Analyst/Progs

PRIME CAD/CAM	to £11K	
	E. Anglia	
IBM 34/38/4341	to £15K	
	London/Home Counties/North	
ICL 1500/ME29/2903	to £12½K	
COBOL	Essex/Herts	
PRIME/COBOL	to £11K	
Accounting/Commercial	Middlesex	

Hardware/Support

APPLICATIONS ENGINEER	to £15K	
Peripherals Support/Microprocessor Systems	London plus International Travel	
IBM SYSTEMS/SUPPORT	to £15K	
	Derby	
TECHNICAL MANAGER	to £15K	
Disk Drive Technology	Sheffield	
EXPD. SOFTWARE TECH. AUTHORS	£ NEG.	
Datacomms/Operating Systems/Telephony/etc.	Europe	
PROJECT ENGINEER	to £11K	
Systems/DEC	Beds/Manchester	
COMPUTER OPERATOR	to £7K	
System 34/36/38	London	

Systems Analysts

IBM/ICL	to £12K	
Stock Control/Commodity Control	London	
CAD/CAM	to £16K	
Real time · Modelling	Man/Essex/South West	
IBM/BURROUGHS	to £15K	
Commercial Accountancy	London/Surrey/Manchester	
IBM/PL/1/DL/1	to £11K	
Database Support	Middx.	
ICL/ME29	to £10K	
Commercial Design	Herts	
IBM SYSTEM 34/38 MAAPICS	to £13K	
	Sussex	

Software Engineers

CORAL/PASCAL/MASCOT/C	to £13K	
Communications	Glos/Herts/Sussex/Midlands/Manchester	
REAL TIME/ASSEMBLER	to £13K	
Microprocessor Design	Suffolk Coast	
MILITARY SYSTEMS/RADAR	to £14K	
Coral · Mascot	Herts/Surrey/Essex/S. West	
PDP/VAX/INTEL	to £13K	
Telecomms · ATE	Derby/Surrey/London/Kent	
COMMS/TELECOMS/MOD	to £14K	
Mini/Mainframe	E. Anglia	
HP3000/INTEL	to £12K	
CAD/CAM/ATE	Home Counties	
TERMINAL EMULATORS	to £15K	
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Snr Appointments

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TEAM MANAGER	to £17K	
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ICL/PRE- AND POST-SALES SUPPORT	to £16K	
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You can be sure of hearing about many opportunities like these, U.K. and abroad, when you make Sloangate your first choice. Take the next step in your career with us!

telephone 01 549 9236

Sloangate The Appointments Register

SLOANGATE LIMITED
Dominic House
171-177 London Road
Kingston-Upon-Thames
Surrey KT2 6RA

(4640)

RECRUITMENT CONSULTANTS

LONDON BASED EARNINGS c£30,000

From an established client base throughout the the U.K. Lorien Computer Services Limited is now probably the fastest growing recruitment consultancy in the country. Our successful London activities are shortly to move to new offices in the West End from which a further considerable expansion of the company's activities will take place.

OPPORTUNITIES:
Outstanding opportunities are now available to join this highly regarded, stable and professional national recruitment organisation. We are seeking high calibre personnel to work in the following established areas of our business:-

1) Agency recruitment- which is supported by a generous advertising buget and proven company techniques.

2) Contract personnel-to further expand and develop key areas of our already large base of contractors and clients by providing high calibre personnel at competitive rates.

3) Recruitment consultancy-to develop advertising and recruitment campaigns for specialist personnel on behalf of clients throughout the U.K.

REWARDS
Base salaries are amongst the best in the industry with good fringe benefits. Our remuneration package is generous with realistic on target earnings in the region of £30,000 per annum. There is, however, no limit to the rewards which may be achieved by the successful recruitment consultant. Considerable career opportunities exist for those persons who are able to make a significant impact on our business.

PERSONAL QUALITIES:
In order to fill one of these newly created positions which are currently available you should ideally possess at least one of the following skills:-

1) Experience of recruitment consultancy, a successful and professional approach to your work and an ability to meet targets.

2) Success in, at least, one other area of DP sales

3) A good technical DP background allied to an outgoing personality, plus a capacity for hard work in order to obtain the outstanding rewards which are readily available in this demanding and stimulating field.

Interested applicants should contact our Managing Director, **LEN CRAY**, either by letter or by telephone during business hours at the office on **01-439-8985**. Alternatively, you may telephone him during the weekend on **0484-21492**. Naturally, all applications will be treated in the strictest confidence.

LORIEN COMPUTER SERVICES

First floor, 35 Piccadilly,
London W1V 9PB
Telephone 01-439 8985

Software R&D in Ireland

Ireland, with its highly progressive industrial development policies and excellent leisure facilities, offers the ideal environment for those contemplating a significant career move.

Many of the top names in high technology electronics and computer industries have established successful operations throughout Ireland—companies like Prime Computer which three years ago moved a substantial portion of its manufacturing capacity to Dublin.

Prime Computer, a Fortune 500 Company, develops and manufactures high performance minicomputers for worldwide distribution. As part of a continuing expansion programme in Europe, Prime has extended its international operations by establishing a Software Research & Development Department located within its highly successful and modern manufacturing plant on the outskirts of Dublin.

We are seeking qualified, experienced Software Designers with exceptional technical ability to join this new team developing complex systems software products in the following areas:

- Distributed commercial processing
- System security and recovery
- Performance measurement
- Software development aids

There are immediate vacancies at the following level:

Project Leader

Probably over 28 years of age, you should have a good engineering/science degree or equivalent qualification with a minimum of eight years' experience in system software development and support. You should be able to demonstrate an ability to lead project teams of three or more people and have a proven track record at successfully implementing major projects in at least one of the above areas. You should also be experienced in the use of at least one high level language such as PL/1 or PASCAL. Knowledge of Assembler level languages would also be an advantage.

Successful candidates will work in an excellent modern office, with individual terminals linked to the dedicated in-house development computer.

These positions attract a very competitive salary and benefits package including—relocation to Ireland, sick pay scheme, private medical care scheme and subsidised restaurant facilities.

Candidates who feel they have the personal qualities and experience to be successful in these highly rewarding positions should apply immediately in strictest confidence to Edith Watson,

Computer Search and Selection,
Hamilton House, Marlowes,
Hemel Hempstead, Herts HP1 1BB.
Tel: Hemel Hempstead (0442) 40761.

Computer Search & Selection

PRIME

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ICL IDMS DATA BASE DESIGNERS
ICL EXPERIENCED ANALYSTS
ICL 2900 IDMS VME/B ANALYST/PROGRAMMERS
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ICL 2900 VME/B SCL COBOL (PENSIONS EXPERIENCE) ANALYST/PROGRAMMERS
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ICL 2900 DME GEORGE 3 IDMS COBOL ANALYST/PROGRAMMERS
ME 29 TME TP IDMS COBOL PROGRAMMERS/ANALYST PROGRAMMERS/DATABASE DESIGNER
ICL VME 2900 IDMS TPMS PROGRAMMERS
ICL 2900 VME/B IDMS TPMS PROGRAMMERS
ICL 2900 VME/B SCL AUG/SEPT SYSTEMS PROGRAMMERS

IBM

IBM SYSTEM 38 MANUFACTURERS APP PROJECT LEADER
IBM MARK 4 COBOL EXPERT
IBM IMS/ADF COBOL PROGRAMMERS
IBM OS/DOS CICS COBOL PROGRAMMERS
IBM VM/CMS DOS/VSE PL/1 DL/1 PROGRAMMERS
IBM PL/1 FOCUS ANALYST/PROGRAMMERS
IBM 43XX DOS/VSE COBOL CICS VSAM PROGRAMMERS
IBM IMS DB/DC COBOL ANAL/PROGRAMMERS + DATABASE ANALYSTS
IBM 30XX VM/370 or VM/SP ASSEMBLER SYSTEMS PROGRAMMERS
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IBM PL/1 MVS+++++ IBM MVS PL/1 IMS JACKSON PROGRAMMERS
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IBM DOS CICS/COBOL PROGRAMMERS
IBM DOS COBOL CICS (COMMAND) DL/1 SELCOPY PROGRAMMERS
IBM COBOL ANALYSTS
IBM SERIES 1 RPS MACRO ASSEMBLER REAL TIME PROGRAMMERS

NORTHERN

IBM 4341 IDMS CICS (MACRO) COBOL PROGRAMMERS

OTHERS

VAX COBOL PROGRAMMERS
VAX EXP + ANY OTHER COBOL PROGRAMMERS
WANG VS COBOL PROGRAMMERS
CTL COBOL PROGRAMMERS
DATAPOINT RMS DATABUS PROGRAMMERS
VAX VMS PASCAL PROGRAMMERS
UNIVAC 1100 DMS 1100 COBOL PROGRAMMERS
CORAL 66 OR SEC 4000 REAL TIME VARIOUS LEVELS
URGENT TECHNICAL AUTHOR
T.I. 9900 ASSEMBLER PROGRAMMERS
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MOTOROLA 68000 PASCAL OR ANY HIGH LEVEL LANGUAGE TEAM LEADER
UNIVAC TIP OPS COBOL PROGRAMMERS
D.G. DBMS COBOL ANALY/PROGRAMMERS OR ANALYSTS
INTEL 8085 ASSEMBLER AND REAL TIME PLM PROGRAMMERS
MOTOROLA 68000 PASCAL SOFTWARE ENGINEERS
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INTEL 8085/6 RMS – 86 PL/M REAL TIME PROGRAMMERS

OVERSEAS

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GOULD SEL OR PDP 11 RSX11 PROGRAMMERS
START DATE NOW THROUGH TO NOV. FOR 6-12 MONTHS

HOLLAND
PHILIPS P800 RTL SEPT FOR 6 MONTHS

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FOR ANY OF THE OVERSEAS CONTRACTS PLEASE CONTACT:
JOAN LOVEJOY (0442) 40761

Computer Search & Selection Ltd
Hamilton House, Marlowes
Hemel Hemstead, Herts. HP1 1BB
(0442) 40761
6th Floor, Carolyn House, Dingwall Road
Croydon, Surrey CR0 9XF
01-681 8311

Computer Search & Selection

(4608)

MICRO TRAINING CONSULTANTS

WEST LONDON **£10-£11K + CAR**

Our client, the UK operation of this leading microsoftware company who specialises in financial packages, are seeking a training consultant who can complement their 1983 expansion programme.
The prospective candidate should come from a training environment who can demonstrate experience in the following areas.
Developing and conducting training courses for the dealer and End User market.
Experience of ACCOUNTING applications and Office Productivity Systems.
You must be mature, self-motivated, bright and have an outgoing personality with good communicative skills.
An excellent remuneration package is offered including overseas travel, company car, bonus and BUPA.
For more information on the next career move you'll never regret, ring SHIRLEY FRANCIS, quoting Ref: 6628.

(4643)

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR 01-499 7761

VISION FOR ROBOTS!

C. London C £10½K

The robotics market is now growing rapidly – and to make these systems more versatile, the race is on to equip them with artificial vision.

Our clients already offer a powerful and flexible DEC-based image processing product – and they plan future developments around the M68000.

If you're well-qualified, have three years + SCIENTIFIC/REAL TIME SOFTWARE experience, and want to hear more,
Call me, Vincent Malling, on 01-549 6441 – NOW!

(4562)

AB EXECUTIVE (KINGSTON) LTD.

IF YOU ARE CALLING on MICRO or MAINFRAME INSTALLATIONS as a SALESMAN or ENGINEER

you could earn extra money with very little effort

Write briefly to Box No. 1287 telling us what you do and giving a phone number. Your reply will be treated with confidence, and our employees are aware of this advertisement.

(4571)

Z80 ASSEMBLY LANGUAGE

Real Time applications programmer for exciting music/video control system.

For further information, salary and conditions call 01-903 6261.

(4574)

HONEYWELL PROGRAMMER

for a

New DPS7 INSTALLATION

This is an interesting opportunity for an experienced Honeywell Programmer to join a small team developing a new database system.

You should have three years' experience on an L64 or DPS7 computer using COBOL and IDS II. Salary negotiable.

Write giving full details of qualifications and experience to: Peter Barnes, Medical Insurance Agency Ltd., BMA House, Tavistock Square, London WC1H 9JD.

(4602)

CAD SOFTWARE ENGINEERS

Following the highly successful launch of the Artworker CAD system for the design of printed circuits, Wayne Kerr Datum Ltd. are seeking additional Software Engineers to further strengthen the design team.

These well rewarded positions offer challenging work and excellent opportunity in an exciting market.

Applicants should apply to:

Wayne Kerr Datum Limited
Woolborough Lane
Crawley Industrial Estate
Crawley, W. Sussex
Tel: 0293 543266

(4570)

DATAPROCESSING – OFFICE AUTOMATION

MOTOROLA as a leader in leading edge technology is now seeking to achieve a rapid expansion of the sales of the office automation segment of its INFORMATION SYSTEMS GROUP.

Since this is a new operation in the United Kingdom, the opportunities are attractive and challenging. The rapid establishment of the company in the United Kingdom market place for office automation products requires that only applicants with a proven successful career and experience in dataprocessing or office automation will be shortlisted.

There are currently openings for:

SALES EXECUTIVES

Candidates must have successful selling experience in distributed data processing and/or office automation products and these will be the over-riding selection criteria. Field and in-house product familiarisation training will be provided. A generous commission scheme will be operated.

SENIOR SYSTEM ENGINEERS/ PRE AND POST-SALES SUPPORT

Applicants should have experience in software operation and maintenance and the ability to liaise with customers on systems software will be an added requirement.

CUSTOMER SERVICE ENGINEERS

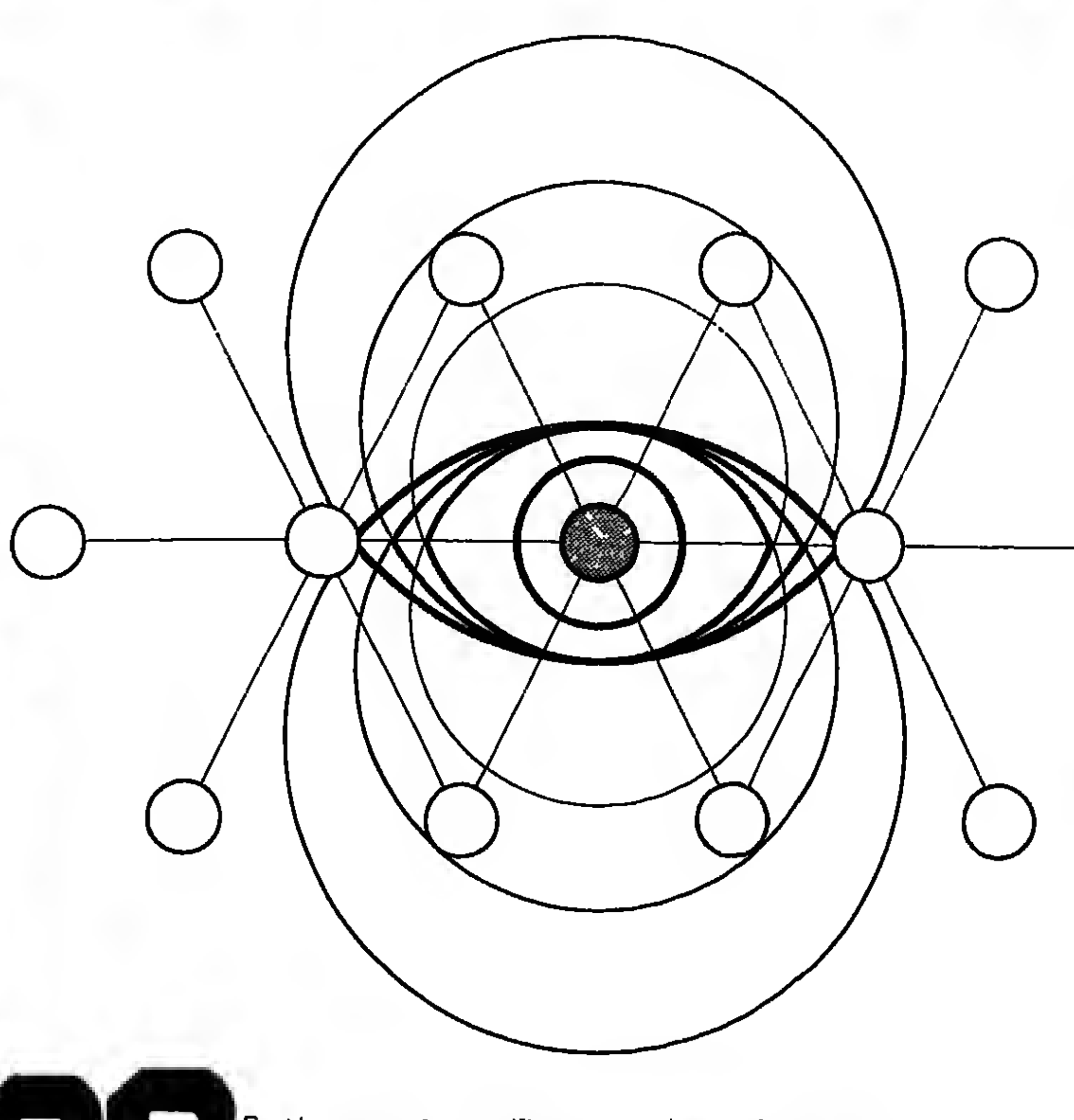
Customer service/field service engineers are required with an established record of maintaining dataprocessing and office automation systems. HNC, HND and equivalent qualification will be preferred. Standby and call-out payments apply plus overtime.

We are offering attractive salaries for all the above posts, plus the use of a company car. Other benefits include: Life Assurance, Health Plan, Pension Scheme, all non-contributory. 20 days annual holiday.

Please telephone for an application form:
Miss S. J. Sewerin, Sec/PA to Managing Director, Motorola Limited, Information Systems Group.
01-989 2101

4668

MOTOROLA
INFORMATION SYSTEMS GROUP



Plotting possible futures

Opportunities now exist within an internationally successful organisation to develop high technology display systems at their recently established division in Surrey. Whilst providing the security of a large company the division is small enough to operate autonomously having a young management team which has already created a friendly and dynamic work environment.

SENIOR ANALYSTS TO £12,500
PROGRAMMERS TO £11,000

Young and enthusiastic Senior Analysts and Programmers are invited to join small highly creative design teams utilising the latest techniques on 8086/80286 micro processor hardware.

Ideally you will have experience in some of the following:–
HIGH LEVEL LANGUAGES (RTL/2, PLM/86, CORAL)
REAL-TIME SYSTEMS
MULTI TASKING, MULTI PROCESSING EXECUTIVE
HOST/TARGET DEVELOPMENT USING VAX 780

You will become involved with:–
LANs (ETHERNET)
X25 PACKET SWITCHED NETWORKS
DISTRIBUTED DATABASE SYSTEMS
RASTER GRAPHICS
GRAPHICS KERNEL SYSTEM
DIAGNOSTIC SOFTWARE

For further details regarding these vacancies please telephone in strictest confidence **Miles Richards on 01-938 1804 (24hrs) or 01-847 2385 (7pm-9pm).**

IPP Information Processing People
20 Kensington Church Street, London W8 4EP
Telephone 01-938 1804 Telex 22861

(4610)

Senior Systems Software Engineer

(Mini/Micros)

to £15,000 + Car

Birmingham (Generous relocation)

Overseas Travel

Our Client, a hugely successful public group, operate at the forefront, of what can genuinely be described as, 'leading edge' microprocessor based technology. Their, already highly acclaimed, product line has achieved remarkable success, and they have made substantial investment in a new product which will not only consolidate their dominant position at home, but further establish their reputation abroad.

Their exceptional, and continued, growth and success has now created an additional requirement within their small specialist team for an experienced Software Technician. The successful Candidate will have sound experience of system software, and specifically operating systems and languages, and it is essential that this experience has been gained within a mini or micro environment. Whilst experience of any of the following – MS-DOS, CP/M 86, UNIX, PASCAL – would be most welcome, overall ability is more important.

This is a key appointment, and is a significant opportunity for technical advancement, and unrivalled prospects within a highly professional and dynamic Organisation.

The skills sought will be highly valued, consequently an extremely attractive salary and benefits package is offered, which will include company car, and very generous assistance with relocation.

For further information, and to arrange a confidential interview, please contact our Advising Consultant **Peter Lees** on **021-236 3781** (24 hour answering service) or 0902 632141 (Evenings and Weekends).

Technical, Sales & Management Appointments

SCR Specialist Computer Recruitment Ltd

SOUTH	MIDLANDS & INTERNATIONAL	NORTH	BELGIUM	HOLLAND
James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461	35-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781	International House, 84 Deansgate, Manchester M3 2ER 061-833 0427	Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7101/71	Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-760947

DALROTH

MANAGER
COMPUTER SYSTEMS DEVELOPMENT

Abu Dhabi — **Salary to £35,000 Plus benefits**

Our Client, a major Middle Eastern Banking Organisation with IBM System 34, 4341 & 4331, is using MIDAS for the Treasury and Merchant Banking activities and CAPITI for domestic banking on the IBM hardware. They will be introducing the CAPBANK system on an NCR 8565 for the domestic banking front office applications.

This position is a new one and the objectives are:

- to assist the Data Processing Manager in the computerisation of the Bank's operating and administrative systems and to manage the Bank's ongoing computer operations including systems analysis, programming, data preparation, equipment operation and maintenance.
- to develop the long-term computerisation programme for the Bank and ensure that short-term recommendations are compatible with the long-term programme and to supervise systems analysis design and programming stages for all new systems.

The *ideal* applicant *will* have extensive systems development experience, very considerable banking experience gained on IBM and NCR equipment and a knowledge of the products being used. However, applicants with extensive systems development and management experience, preferably gained in a banking or financial environment on either NCR or IBM equipment, will also be considered. Experience in the Middle East would be an added advantage.

A very attractive package will be offered to include Married or Single status, free furnished accommodation, medical insurance, car allowance, leave flights, etc.

The Client will be in the UK to conduct final interviews during early August.

For further information, please telephone Roger Allington or Sarah Oram on 01-493 2947 9am to 9pm, or weekends Roger Allington on Little Gaddesden (044284) 3536 quoting Ref 9991.

DALROTH & PARTNERS LTD, 4 HALF MOON STREET, LONDON W1
Telephone 01-493 2947

(4596)

GROUP COMPUTER DEVELOPMENT MANAGER

The Lilley Group is engaged in the construction Industry, operating through a number of autonomous subsidiaries located in the U.K. and overseas, using a variety of mainframe and microcomputers on both accounting and technical applications.

The Group wish to appoint a Computer Development Manager to plan, recommend and implement a systematic development of the utilisation of modern computer techniques, and to co-ordinate that development within the U.K. subsidiaries, including the maximisation of existing resources.

This will be a senior appointment and the successful candidate must be able to communicate with senior management, accountants and engineers in practical terms, in order that the Group can take full advantage of developments in computer technology to assist in the management of its business. Knowledge of the construction industry is essential.

Salary is negotiable, with benefits package including company car, pension scheme and (if appropriate) relocation expenses.

Please apply giving full details of qualifications and career to date to:

LILLEY GROUP

The Group Financial Director,
F. J. C. LILLEY PLC,
331 Charles Street,
Glasgow G21 2QX

Top flight programmers

SAS — Systems, Applications, Software

A Division of TRIAD Computing Systems Limited based in Guildford, Surrey needs talented and adaptable programmers to work on:

- **real-time systems for industry and the public sector**
- **engineering and scientific applications**
- **basic software with special emphasis on database and file management.**

We are looking for people with high ambitions and offer rapid progress, on merit, to positions of responsibility in systems design and project management.

Salaries to £11,000 p.a. plus bonus and usual benefits.

TRIAD Computing Systems Limited

Write to: Alistair Fulton, Systems & Applications & Software, TRIAD Computing Systems Limited, 108 Woodbridge Road, Guildford, Surrey GU1 4PY. - Telephone: 0483 37976

ADVANCED SYSTEMS (UK) LTD
require
SALES OR DP PROFESSIONALS FOR

ACCOUNT MANAGERS (Sales)

£26K + BMW or equiv + benefits

1. **THE COMPANY**
   Advanced Systems (UK) Ltd is part of a multinational Corporation and leading producer of training products and services for the DP Industry with an annual growth rate in excess of 35%.
2. **THE JOB**
   To extend and support the existing Customer Base by aggressively selling and promoting our extensive range of multimedia and computer based training courses and related services.
3. **THE PERSON**
   The successful candidates must be able to clearly demonstrate either
   A. A proven and successful record in executive level sales. Experience within DP or related industries would be an advantage.
   or
   B. The ability to successfully utilise extensive DP knowledge – gained whilst working as a DP professional (S/A etc.) – in a sales environment.
4. **THE BENEFITS**
   An attractive compensation plan including a basic salary of five figures, car, expenses and benefits package.

To arrange an interview telephone:
Southern Office
Mr Tony Koch 01-902 3011
Northern Office
Mr Barrie Farrow 061-228-0756

ASI The Total Training Resource

SOFTWARE DEVELOPMENT
RSX 11 – MACRO
SALARY: CIRCA £10,000 — WALTON-ON-THAMES

Due to the success of an exciting new project an interesting and challenging position has been created for development work associated with real time computer-based monitoring systems.

For this position we require an innovative person who can work under his/her own initiative, within a small, highly-motivated team.

Applicants must have previous DEC Macro experience and preferably possess a technical qualification to at least HNC level.

In addition to an attractive negotiable salary a range of large company benefits are offered, together with excellent career opportunities.

Please send full details, or telephone for further information to Sue Hayes at Chubb Alarms Limited, 42-50 Hersham Road, Walton-on-Thames, Surrey KT12 1RY. Tel: Walton-on-Thames (09322) 43851/48141 Ext. 190.

(4618)

JUNIOR PROGRAMMER
N.E. Surrey

Substantial group of Timber and Builders' Merchants require an Assembler Programmer to strengthen their ICL System 25 development team. Previous experience of System 10 or System 25 would be an advantage.

The position carries a salary of up to £5,750 dependent on age and experience and 21 days' holiday plus bonuses.

Please apply in writing with C.V. to:

D. Lidiard, Group Data Processing Manager
Sabah Timber South East (Merchants) Ltd
Xylon House, 1 Central Road
Worcester Park, Surrey KT4 8DN

(4626)

PUBLIC SECTOR APPOINTMENTS

Strathclyde

STRATHCLYDE POLICE DEPARTMENT

COMPUTER MANAGER

Salary Scale – SO6 – £16,536-£17,736
Kilsyth Police Office, Parkfoot Street, Kilsyth

Applicants should be suitably qualified and have substantial experience of large scale inter-active systems.

The successful applicant will have overall technical responsibility for the proposed Scottish Criminal Records computer installation and its associated services which will operate on a 24 hour, 7 day basis.

Duties will include defining initial staffing levels, day to day management of the computer operation, its staff and services, training of staff and users, liaise with suppliers to ensure satisfactory service and maintenance of equipment, annual budget of the unit and development and extension of equipment and programmes.

Application forms may be obtained from the Assistant Director of Manpower Services, Glasgow Sub Region, Strathclyde House, India Street, Glasgow to whom completed forms quoting Ref: G4319 should be returned by 28th. July 1983.

R.M.O. McCULLOCH
Director of
Manpower Services

Strathclyde Department of Education (4642)

Anaerobic Digester Research and Development Unit

Research Assistant
(One year post)
Computing

Funded by the Ministry of Agriculture Fisheries and Food

Salary: £4,880 – £5,808 p.a. inc.

Applications are invited to join a multidisciplinary team working on various aspects of anaerobic digester technology. The post is for a graduate in an appropriate discipline for one year to write a computer program to assess the economics of anaerobic digestion plant. A prior knowledge of anaerobic digestion is not essential but applicants must have experience of writing interactive FORTRAN programs for microcomputers. Experience with databases would be an advantage. The program will be written for the CASU Mini CII microcomputer running under CP/M.

Further particulars and application forms are obtainable from:

The Personnel Officer, The Polytechnic of Wales, PONTYPRIDD, Mid-Glamorgan, South Wales. CF 37 1DL Tel. (0443) 405133 ext. 2021 (Please quote Ref. No. MAFF4)

Closing date: 29th July, 1983.

(4468) The Polytechnic of Wales

PORTLAND TRAINING COLLEGE FOR THE DISABLED
MANSFIELD, NOTTS.

Applications are invited for the post of

CHIEF INSTRUCTOR

to head the Business Studies Department of this College, which provides residential vocational training for adults.

Reporting to the Training Manager the responsibilities of this post would encompass the organisation and day-to-day operation of a department which provides a variety of training courses for up to 50 students.

Candidates would be expected to have experience of training and instruction in business subjects and a relevant qualification in teaching or training would be appropriate.

The College is about to introduce the use of microcomputers and related technological equipment as a means of training students for the Business world. It would therefore be necessary for the Chief Instructor to be fully conversant in the usage of such equipment as a learning system, and be able to introduce its use into the department.

Further particulars and application form may be obtained from the Principal, Portland Training College for the Disabled, Harlow Wood, Nottingham Road, Mansfield, Notts. NG18 4TJ. Telephone: Mansfield 792141.

(4635)

Computer Division
Senior Computer Operator to £9,399

To assist the Shift Leader with the efficient and effective running of a computer operations shift

A two-shift system is currently in operation using ICL 2966 and ME28 hardware, running under CME (VME/B and DME/George 3) and TME. An expanding communications network based on DRS and 7502 systems is also in use.

A minimum of two years' relevant experience is required and a demonstrable knowledge of VME/B is desirable. Further technical training will be given as necessary.

- 20-25 days' annual leave plus statutory holidays
- Interest-free season-ticket loan
- excellent tube, road and bus links

For an informal discussion about the post, ring Peter Blentz, Computer Manager on 01-748 2077, ext 204.

Application forms from London Borough of Hammersmith & Fulham (Personnel), PO Box 807. Tel: 01-741 0904 (24-hour answering service), quoting reference FC 50. Closing date: 1st August, 1983.

APPLICATIONS WELCOMED FROM DISABLED PEOPLE

Hammersmith & Fulham

(4587)

DURHAM UNIVERSITY

Digital Systems Design for Computer Graphics

Applications are invited for a

RESEARCH ASSISTANT

to work on an established SERC project in the field of computer graphics, to produce a very high speed display processor using special purpose LSI circuits. These integrated circuits are being designed as part of the project and will be fabricated by the SERC Microelectronics Laboratories. Candidates should preferably have postgraduate industrial or research experience in any of the following fields – systems programming, graphics software development, digital electronics design. It will be possible to register for a higher degree based on this work.

The appointment will be for two years from as soon as possible.

Initial salary on scale 1B £6310-£7190, plus superannuation.

Applications (three copies) naming three referees should be sent to the Registrar, Science Laboratories, South Road, Durham DH1 3LE by 12 August 1983, from whom further particulars may be obtained.

(4559)

OXFORD UNIVERSITY COMPUTING SERVICE

COMPUTING IN THE ARTS – ADVISOR

Oxford University Computing Service has a vacancy for an external advisor in computing in the arts, for which it is a leading exponent. The successful applicant will be responsible for supporting and advising external users of the national facilities which the Service provides, including a Lasercomp phototypesetter, KDEM optical character reader and package software for computing in the arts.

The appointment will be within the Universities' Research Staff scale 1B (£6,310-£9,875 per annum) according to age and experience. The post is established for three years.

Further details and application forms may be obtained from:

The Director's Secretary
Oxford University Computing Service
13 Banbury Road
Oxford OX2 6NN

Telephone: (0865) 56721

Closing date for applications: 5 August 1983.

(4584)

TEESSIDE POLYTECHNIC

Department of Chemical Engineering

LECTURER II/SENIOR LECTURER IN CHEMICAL ENGINEERING

Applications are invited from candidates interested in linking micro and mini computers to the control of pilot plant. The Department possesses a new Ferranti Control computer linked at present to an absorption column. Plans are advanced in extending control to catalytic reactors, distillation columns and fermentors. In total some twelve plants are expected to be simultaneously operational around the clock.

The post would interest a suitably qualified graduate with experience of working in the chemical industry prepared to face the challenge of developing with the new technology.

Salary: Lecturer II – £7,218-£11,868 per annum
Senior Lecturer – £10,683-£12,552 (work bar) · £13,443 per annum

An appointment may be made at either Lecturer II or Senior Lecturer level but the salary on appointment will not be greater than £10,443 per annum.

Application forms and further particulars are available from Personnel Section, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 3BA. Telephone: (0642) 218121, extension 4174.

Closing date for applications: 31 August 1983.

(4658)

ROYAL FREE HOSPITAL
Department of Medical Physics

COMPUTER SCIENTIST

An honours science degree graduate is required to join a small team engaged in the development of a system to treat cancer using a computer controlled radiotherapy unit. The post will involve programming Hewlett Packard computers using FORTRAN. A knowledge of radiotherapy, medical physics or basic electronics would be advantageous.

Further details from Dr. J. A. Greca, telephone 01-794 0500, ext. 3058.

Salary scale: £7,274 to £8,468 p.a. inc. L.W.

Application form and job description available from the Personnel Dept., Royal Free Hospital, Pond Street, Hampstead, N.W.3.

Please quote Ref. 1486. Closing date July 28, 1983.

HAMPSTEAD HEALTH AUTHORITY

(4677)

TECHNICIAN
(Grade 4)

required in Department of Land Management and Development, University of Reading, to take responsibility of the day-to-day running of the Department's computing facility. An interest in the development of software would be an advantage. Salary in Scale £6,626-£6,792 p.a.

Application form available from Personnel Office, Whiteknights House, University at Reading, Whiteknights, Reading, Berks RG6 2AH. Please quote Ref. T11A.

(4577)

CALDERDALE METROPOLITAN BOROUGH COUNCIL EDUCATION DEPARTMENT

THE PERCIVAL WHITLEY COLLEGE OF FURTHER EDUCATION FRANCIS STREET, HALIFAX HX1 3UZ
Tel. Halifax 58221

Required from 1st September 1983 a

TEMPORARY LECTURER I/II IN COMPUTING

Application forms and further particulars obtainable from the Principal at the College (SAE required). Closing date 28th July, 1983

(4641)

UNIVERSITY OF ESSEX
Department of Electrical Engineering Science

Senior Lecturer/Reader in Computing Engineering

Applications are invited for the post of Senior Lecturer/Reader (salary £13,515-£16,925) for appointment from 1st October, 1983, in the field of Computer Engineering. Candidates should have an honours degree and relevant experience, together with a strong research and teaching record in computer engineering. Applicants with an all-round ability in hardware and software with a special interest in microprocessor applications are encouraged to apply.

The person appointed will be expected to teach courses at undergraduate and graduate level and to take part in and initiate research in the field of computer and microprocessor engineering. The Department has a long history of research in what has recently become known as Information Technology and this post is seen as enhancing these activities.

Applications (nine copies) including a curriculum vitae and the names and addresses of three referees, should reach the Registrar (reference AG/165/CW) University of Essex, Wivenhoe Park, Colchester CO4 3SQ from whom further particulars may be obtained by 11 August 1983.

(4596)

Imperial College of Science and Technology

Administrative Computing Development Officer

The College is in the process of expanding its administrative computing service in order to establish a set of unified data bases around which the software packages required by Central Administrative Sections can be expanded or developed. An important additional requirement is to develop a management information service for senior management. The College has a student population of 4,700 and a staff of 3,000.

An experienced manager is required for the development and direction of this project. Candidates should have experience in the design and use of data bases for administrative purposes. Proven success in the management of small software teams and in the development of structured, fully documented software is important.

Appointment will be made in the salary range £13,515 to £16,925 per annum plus £1,186 London Allowance.

Further particulars and application forms are available from the Personnel Secretary, Imperial College of Science and Technology, London SW7 2AZ, to whom applications should be submitted by 12 August 1983.

(4573)

CANNOCK CHASE DISTRICT COUNCIL
TREASURER'S DEPARTMENT

COMPUTER STAFF

The Council is installing an ICL ME29 to replace computer facilities currently being provided on an agency basis by other Authorities.

A comprehensive development plan is being prepared for the introduction of computer systems for a wide range of the Council's services and it is anticipated that these will be implemented within a two-year period.

This will provide an exciting opportunity for staff to participate in the installation of new equipment and be responsible for the development of a new and comprehensive service.

In order to ensure a smooth transition to the new arrangements the following staff are required.

COMPUTER MANAGER
GRADE PO1(3-7) £10,539-£11,703
This is a key post and the successful applicant will be responsible for the setting up of all computer systems in accordance with the development plan.
Applicants should have a wide computer experience in Local Government (preferably with the ME29), experience in management and be able to liaise with users at all levels.

SYSTEMS ANALYST/PROGRAMMER – SCALE 6/SO1 - £8,154 - £9,660
Applicants should be experienced analysts/programmers and have a sound knowledge of ICL software preferably in a local government environment.

TRAINEE ANALYST/PROGRAMMER – TRAINEE GRADE £2,976-£5,841
This post will be suitable for applicants who already have some experience in computers in local government and wish to develop their careers further.

The Council will assist with relocation expenses in appropriate cases.

Application forms, together with further particulars are available from the Secretary, Cannock Chase District Council, P.O. Box 28, Beecroft Road, Cannock WS11 1BG or telephone Cannock 2821, Ext. 484.

Completed forms should be submitted by August 1st, 1983, for the post of Computer Manager and for the other posts by August 15th, 1983.

(4616)

SENIOR PROGRAMMER
£11k-12k pa

We are one of the leading local authorities in the introduction of Data Processing Systems and have a lively and professional development section where high standards and training are key priorities.

An IBM 4341 is in use with DOS/VSE, CICS and COBOL. A 3083E is planned for 1984.

We are seeking a Senior Programmer to work in one of our development teams.

He/she should have a minimum of four years' in Data processing with at least two years' COBOL and CICS experience, and must be able to provide guidance to more junior programmers. Experience of structured programming would be useful. There will also be opportunities to help in analysis and design tasks.

In return, we offer a friendly working atmosphere in pleasant modern offices off Kensington High Street, excellent training facilities, five weeks' holiday, flexitime and an active sports and social club.

For further details, ring Tony Eldred on 01-937 5464, ext 330.

The Royal Borough of KENSINGTON AND CHELSEA

Application forms quoting Ref CW322 from the Personnel Service, The Town Hall, Hornton Street, London W8 7NX.
Tel: 01-937 8582 (24 hour answering service)
Closing date for application 25 July, 1983.

Applications are welcome from suitably qualified disabled persons.

(4614)

GREENWICH DEVELOPMENT COMPANY
INFORMATION TECHNOLOGY CENTRE

GENERAL MANAGER

£12,000 (includes outer London Weighting)

We are looking for a General Manager with a knowledge of micro technology and experience in the education and training of young people. Above all we seek somebody with enthusiasm for this new and exciting project and with the ability to develop this enterprise. Information Technology Centres are imaginative products of a joint initiative between the Department of Industry and the Manpower Services Commission. They are designed to help young unemployed people get training and work experience in the area of new technology.

The Centre will develop products and establish services for the local community. It will offer a computer service to small businesses, community organisations and others who may have a need. Together with Thames Polytechnic it is anticipated that a range of electronic products will be designed and introduced for manufacture.

Further details and an application form can be obtained from:

Ms. S. Shaw, c/o Greenwich Development Company,
Room 105, 29-37 Wellington Street, Woolwich SE18
Tel: 01-854 8888 ext 2024
Closing date: Friday 5th August.

The Greenwich Development Company is an equal opportunities employer. All applicants will be considered irrespective of sex or country of origin.

4599

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WATCH OUT – HERE COMES THE FUTURE!

Whether or not you are currently considering a change of employment, you ought to be asking yourself if your company has the necessary resources to assure its own survival as well as your career development in this industry of technological leap-frog. Does it have:

- ★ A comprehensive range of computer systems?
- ★ Extensive research and development resources?
- ★ International coverage
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- ★ Complete in-house training facilities?
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- ★ Large user base?
- ★ Good prospects for advancement into management?

If so, you may already be employed by our client. If not, here's your chance to advance into a company with real opportunities for personal development. All you need is a proven ability to:

- ★ Negotiate at board and shopfloor levels.
- ★ Sell computer related systems in a creative manner.
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- ★ Deal with new and established accounts.
- ★ Qualify sales prospects perceptively.
- ★ Consistently achieve sales objectives.
- ★ Co-ordinate and motivate a sales team.
- ★ Handle a wide range of computer applications.

Vacancies currently exist in:

MANCHESTER LEEDS BIRMINGHAM LONDON

and successful candidates can expect a remuneration package which includes a company car, pension fund and health insurance, as well as on-target earnings of

£25,000

Please supply complete career details to Alasdair Scott in London, or Roger Dodd in Lichfield, quoting reference SSA/073.

(4563)

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If you consider yourself to be well above average in terms of systems and programming experience and/or applications knowledge, if you are not satisfied with run-of-the-mill job opportunities; then you are probably the kind of person most likely to benefit from our specialised permanent and contract recruitment services for accomplished and discerning technicians.

Please contact Neil Skidmore or Elaine Westwood.

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Answering Service after 6 pm and weekends

EDUCATION DEPARTMENT

Computer Electronics Supervisors (2 posts)

£9,060-£9,945

We are seeking persons with proven experience in either electronic hardware design, maintenance and construction or computer programming and allied skills for an Information Technology Centre to be opened shortly in the Chatham area. The aim of the Centre, which is jointly sponsored by the Kent County Council and Marconi Avionics, is to help unemployed young people gain work experience and training in such fields as electronic computer assembly, control systems, computer maintenance, digital techniques, word processing and teletext.

Experienced persons are required to supervise groups of trainees, therefore an empathy for the young unemployed is essential.

The appointment is for an undetermined period and will subsist only whilst the Programme is in being. Preference given to unemployed persons having the necessary qualifications.

For further information telephone Mr J. Richards (Manager) on Medway 575928.

Job description and application form returnable by 30th July 1983 from W. H. Petty, Esq., the County Education Officer (F4), Springfield, Maidstone, Kent ME14 2LJ (SAE please).

KENT COUNTY COUNCIL

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Scientific Databases

A vacancy exists in the Database Section of the Computing Division, Rutherford Appleton Laboratory for someone to work on Scientific Databases.

The work is of an interesting and varied nature supporting Scientists using database techniques in their projects, providing advice and assistance and investigating new techniques in the area of databases.

The Laboratory, in collaboration with Universities, supports exciting research programmes, both here and abroad, in Physics, Astronomy and Information Technology.

Applicants should have a degree or equivalent in a Scientific, Mathematical or Engineering subject and have expertise in, at least some of the following:—

Systems Analysis, Design and Implementation
Programming in FORTRAN
Data Analysis
Scientific Data Handling

Training will be given where necessary. Scientific education or experience would be an advantage.

Appointment will be made within one of the grades depending on age, qualifications and experience.

Scientific Officer	£5,682 – £7,765
Higher Scientific Officer	£7,149 – £9,561

Some assistance with the expenses incurred in house sales/purchase may be available.

Appointment as Higher Scientific Officer requires a good honours degree and several years relevant experience.

For an application form please write to Recruitment Officer, Science and Engineering Research Council, R A L, Chilton, Didcot, Oxon, OX11 0QX. Tel: Abingdon (0235) 445435 quoting Ref VN154.

Closing date: 4th August 1983

(4578)

serc Rutherford Appleton Laboratory

DATA PROCESSING DEVELOPMENT & TRAINING OFFICER
MALAWI

The Government of Malawi requires a Data Processing Development and Training Officer for the Computing Functions of the Malawi Railways Improvement Project — a 5 year programme of aid and manpower and track rehabilitation.

The Officer would have overall responsibility for the control of the Data Processing Function; identification, planning and implementation of computer systems in accordance with the company's objectives; setting standards for analysis and programme work.

Qualifications: Applicants, who should be British citizens, should be graduates with experience of running a Data Processing Department together with personal Programming and Analysis experience. Prior experience in an ICL environment is desirable.

Appointment: 18 months in the first instance. Posting, Limbe; salary (UK taxable) in accordance with qualifications and experience plus a variable tax free overseas allowance currently in the range £1,480-£3,165.

This post is wholly financed by the British Government under Britain's programme of aid to the developing countries. In addition to basic salary and overseas allowances other benefits normally include paid leave, free family passages, children's education allowances and holiday visits, free accommodation and medical attention.

For full details and application forms, please apply (not later than 25 July) stating clearly post applied for, quoting ref. (AH 357 DSM) and giving details of age, qualifications and experience to: Appointments Officer, Overseas Development Administration, Room AH351, Abercrombie House, Eaglesham Road, EAST KILBRIDE, Glasgow G75 8EA.

ODA

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MIDLANDS & SOUTH WEST

The Distribution Industry offers enormous potential for systems houses, particularly our client who is one of the highest respected, as well as one of the largest and longest established in the business with a very powerful and well established product offering.

We are seeking candidates with sales experience within the Distribution Industry who would appreciate a move to a company with real technical excellence and career opportunities for achievers.

Please contact Roger Dodd in Lichfield, quoting reference DSF/073.

SALES EXECUTIVES
MANUFACTURING SYSTEMS
EAST MIDLANDS & LONDON

If you are currently involved with manufacturing systems, you will be very much aware of our client's outstanding product; a real market leader in mini-computer based manufacturing systems.

If you want to increase both the quality of the product you are selling, as well as your career prospects, this is an ideal opportunity. This of course, is based on the assumption that you already have experience of selling manufacturing related products.

Contact Alasdair Scott in London, or Roger Dodd in the Midlands, quoting reference DSG/073.

SALES EXECUTIVES
NORTHERN ENGLAND MIDLANDS LONDON & SOUTH

Many new company and/or new product situations turn out to be a career cul-de-sac. Here is an opportunity for experienced computer salespeople to be part of a new phase of expansion within an established major international manufacturer offering real career prospects, a comprehensive range of computer systems, extensive training facilities and a very powerful new product announcement. A company car is provided and on-target earnings will be

£25,000

Please contact Alasdair Scott in London, or Roger Dodd in Lichfield, quoting reference SSB/073.

SOUTH REGIONAL SALES MANAGER
£30,000

If you are an experienced and successful sales manager with some knowledge of data communications equipment, this could be the best job opportunity you have had in a long time. Based in the Home Counties, our client will already be well known to those applicants already in the communications business as an outstanding, successful, enthusiastic and happy company.

Please contact Alasdair Scott in London, quoting reference SMC/073.

BRANCH MANAGER
LONDON

This is a very special opportunity for an accomplished young Sales Manager to advance into the challenging role of general management; someone with an eager, burning ambition to make a name for himself; an entrepreneur who can maximise the potential of a solution based computer business.

A seven figure turnover already exists over a number of well established vertical markets with considerable scope for creative business development.

The compensation package is negotiable with anticipated earnings around

£28,000

plus usual senior management benefits.

Please contact Alasdair Scott in London, or Alan Williams, quoting reference WMD/073.

SALES EXECUTIVES
EDINBURGH/ABERDEEN

We can assure you that whatever assumptions you make about these two jobs based on the following features/benefits, will be an undervaluation of their real potential.

- ★ Latest product announcements at least a year ahead of competition.
- ★ Over 25 new product announcements at least a year.
- ★ Most of current management graduated from within the company.
- ★ Vacancies result from expansion.
- ★ We are talking about actual earnings, not make-believe, when we talk about

£25,000 + Company Car

If you are an accomplished computer industry salesman residing in Scotland, please call Roger Dodd in Lichfield, quoting reference DSE/073.

(4595)

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SALES BIT

Quality of management – 60

Sales people have role in credit chasing

CHASING overdue accounts could be seen by the salesman as a degrading and unrewarding process. It is easy to feel embarrassed about harassing people for money, and even if carried out successfully, it results only in the payment of money that you assumed was rightly yours when you sold the product.

It is a poor alternative to spending one's time pursuing new business.

The salesman must see the process as an essential and justifiable sales related activity rather than a time-wasting imposition.

It is important to realise that when a client does not pay on time, he is failing to honour his promises; he is defrauding his supplier of the interest the outstanding money could be generating; he may be totally dissatisfied with his purchase; he is establishing grounds for the salesman having to return the related commission; he may be going bankrupt! So it is essential that appropriate action be taken promptly and stringently, for the salesman and the company have much to lose by assuming that responsibility for chasing overdue accounts resides elsewhere.

Maintenance of effective credit control procedures and the communication of up-to-date information must rest within the accounts department, as should the initial stages of automatic chasing procedure; but once an account becomes seriously overdue it is the salesman's task to visit the client and resolve the problem.

However, I believe it is important that salespeople are kept informed about every stage of credit chasing right from the first reminder. Often a personal reminder from the salesman at an early stage can avoid a confrontation later.

Legal action is far removed from being an absolute solution and this reality is fully exploited by many unscrupulous companies. They realise that litigation is an expensive and time-consuming process that most suppliers would prefer to avoid. Further, they know they can hang on to their money right up to the day of the hearing, pay at the last minute, and get away with it; many months having passed in the meantime. They also appreciate that, even if they do get involved in legal proceedings, the court's sympathy is usually bestowed on the debtor rather than the plaintiff.

Consequently, you could find your outstanding account being spread in easy payments over the next millennia.

In fact, getting a court settlement in your favour could be the worst thing you ever did.

The Small Claims Court can, depending on the size of the debt you are chasing (the maximum is £500), bring about much swifter settlement than the normal judicial procedure; but this size of debt is far below the value of a typical computer industry invoice. Nonetheless, the same risks of unsatisfactory settlement still apply.

My own company recently had a badly overdue account with a program package company. It was not disputing the bill or dissatisfied with the product; it just didn't want to pay. Eventually we decided to take legal action, but as we had not had this kind of situation before, decided to contact our solicitor.

He said: "Don't spend your money on litigation, until you have tried nuisance and intimidation." (Yes, it's such good advice it even rhymes!) So, we created a barrage of telephone calls and letters to the debtor's key people and sent one of our consultants (6ft 5in, 17½ stones) to ask nicely for the money.

Within 10 days the matter was settled whereas we would probably be chasing the money still had we chosen to go to court; to say little of the cost.

The company didn't pay up because it didn't like the look of the big guy, or because it realised the error of its ways; it paid because it wanted us off its back; it couldn't put up with the nuisance and embarrassment. We were dealing with what we call a bad debt situation as opposed to an overdue account and we had no intention of doing further business with the company.

Getting money and sustaining a continuing business relationship usually demands less dramatic actions. Even so there is no substitute for prompt and positive action, face-to-face collection and continued badgering. After all, your money is sitting in their bank account when it should be earning interest in yours or offsetting your expensive overdraft.

There is no substitute for prompt and positive action, face-to-face collection and continued badgering. After all, your money is sitting in their bank account when it should be earning interest in yours or offsetting your expensive overdraft

It is costing you money to be an involuntary, interest free funding agent. So it is important to question your reasons for continuing to supply those organisations which consistently disregard the terms under which you agreed to do business together.

I recall a situation in Birmingham where a man bought, from a well-known national supplier, a pair of shoes which subsequently proceeded to fall apart. However, the shop manager would not replace them. So the man made himself a sandwich-board to which he appended the shoes and a legend to the effect "These shoes were bought from this shop, they fall apart and they won't change them. Inspection welcome". Then he arrived outside the shop on the following Saturday morning.

Apparently the shop did little business until the man was given a new pair of shoes and encouraged to go home.

I do not suggest you should organise demonstrations outside every client who owes you money, but it does suggest that companies have to be embarrassed into payment when they have insufficient integrity to do otherwise.

Alan Williams

PUZZLE ANSWER

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